

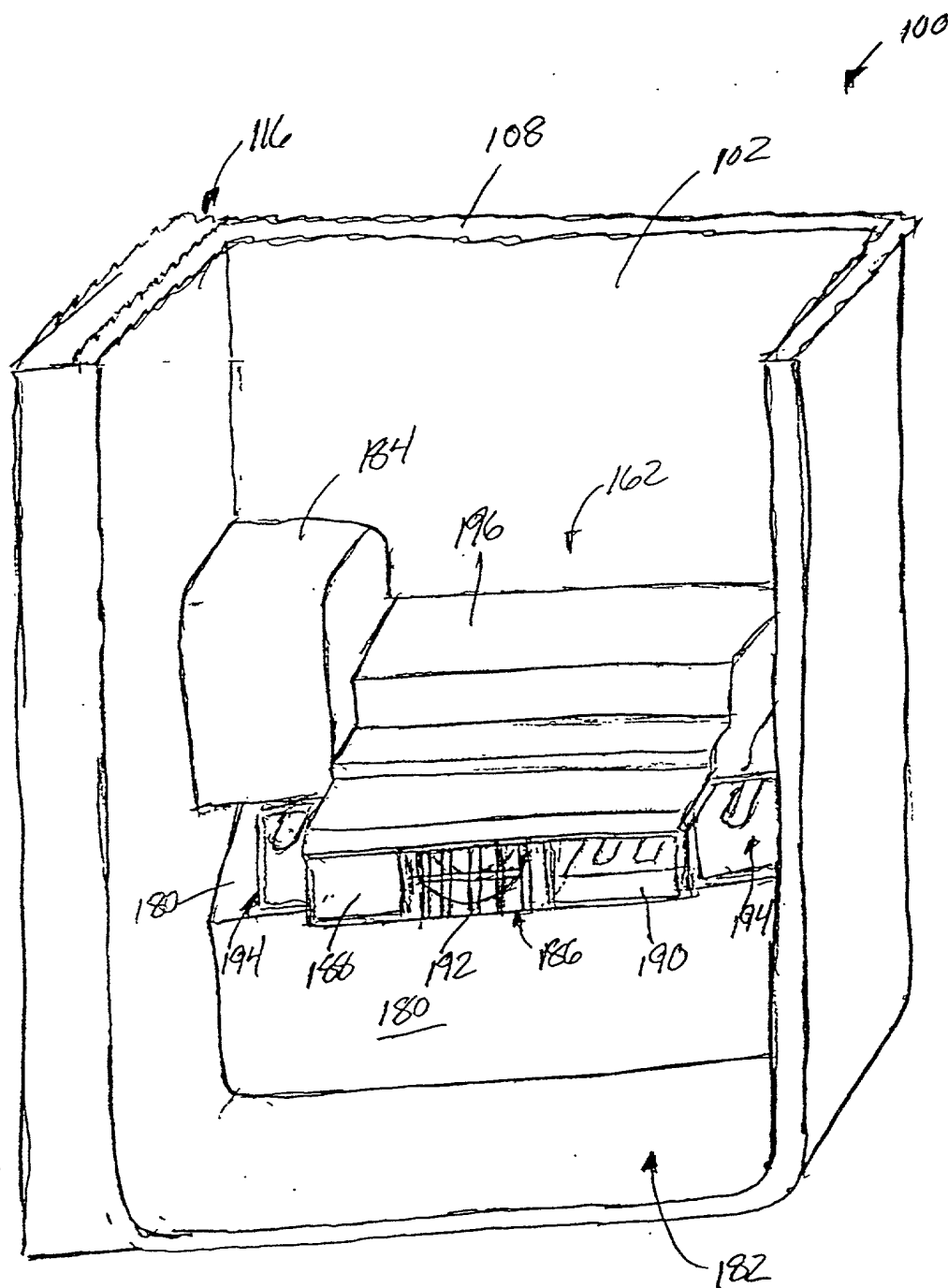
FIG. 1

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FIG. 2



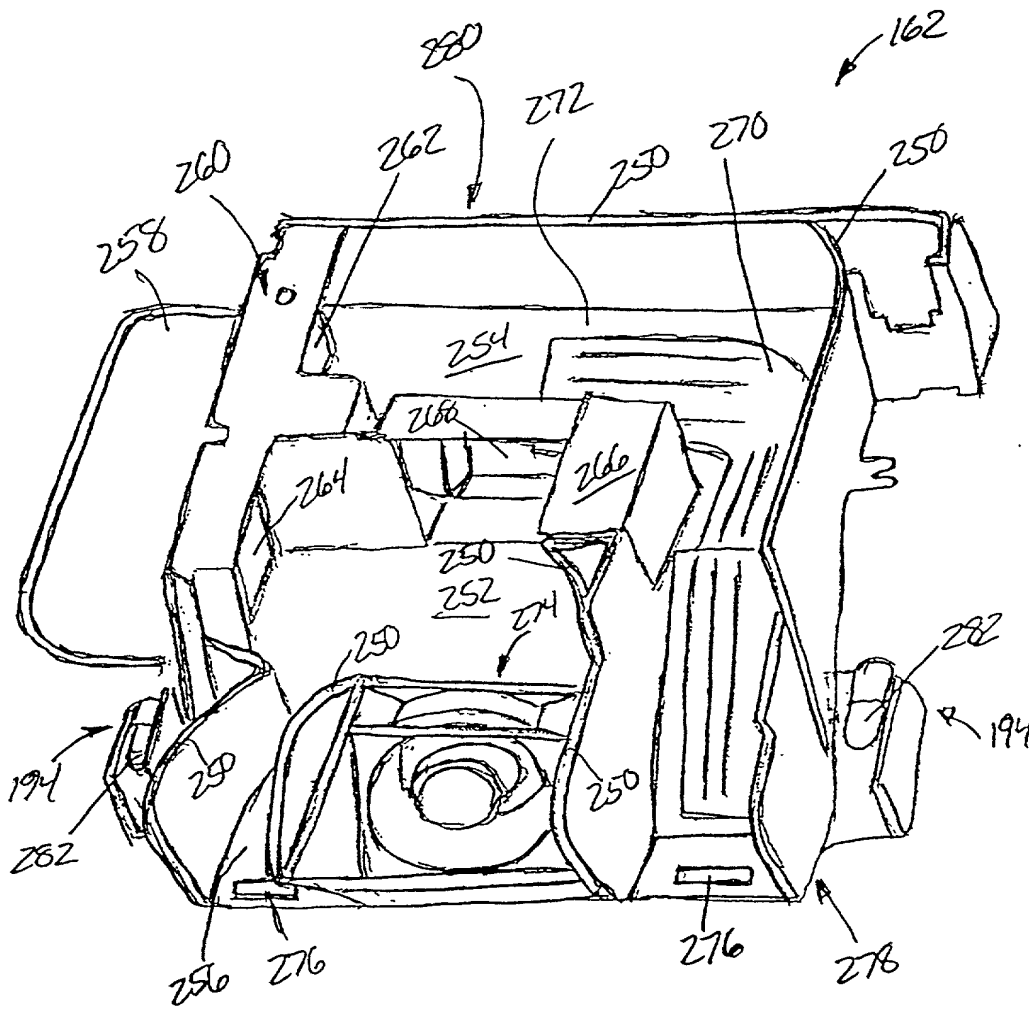


FIG. 4

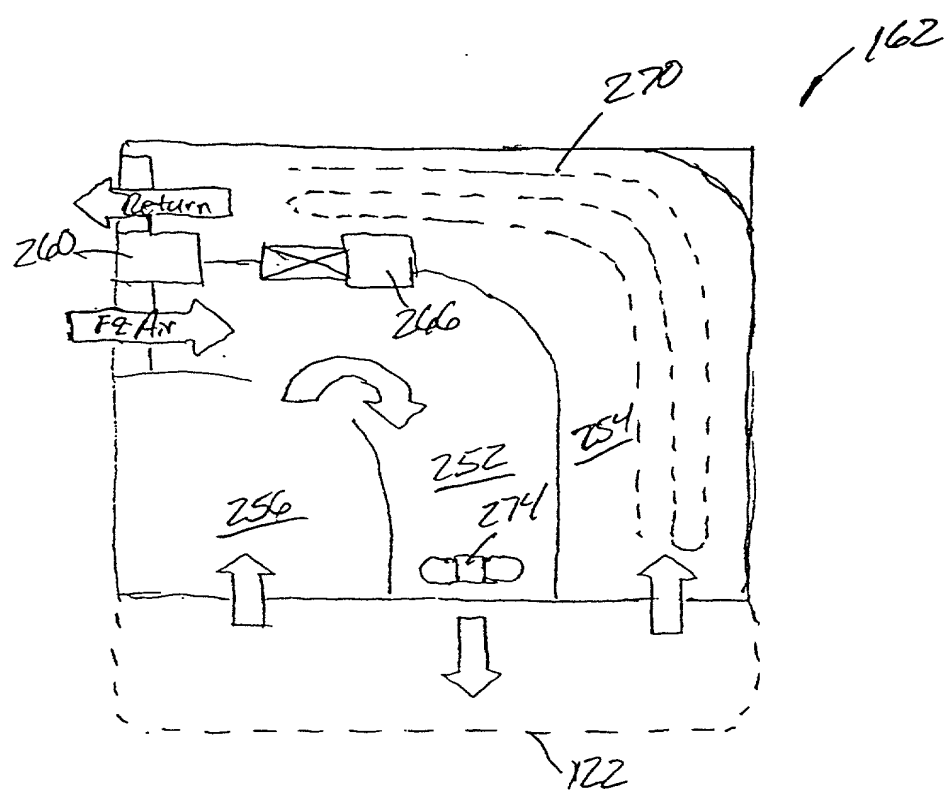


FIG. 5

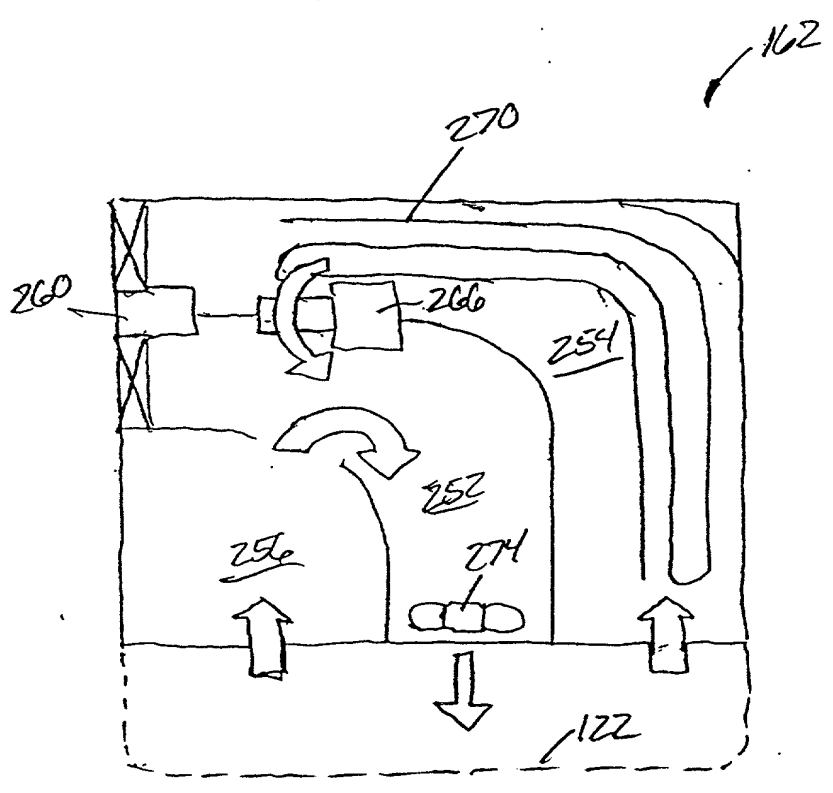


FIG. 6

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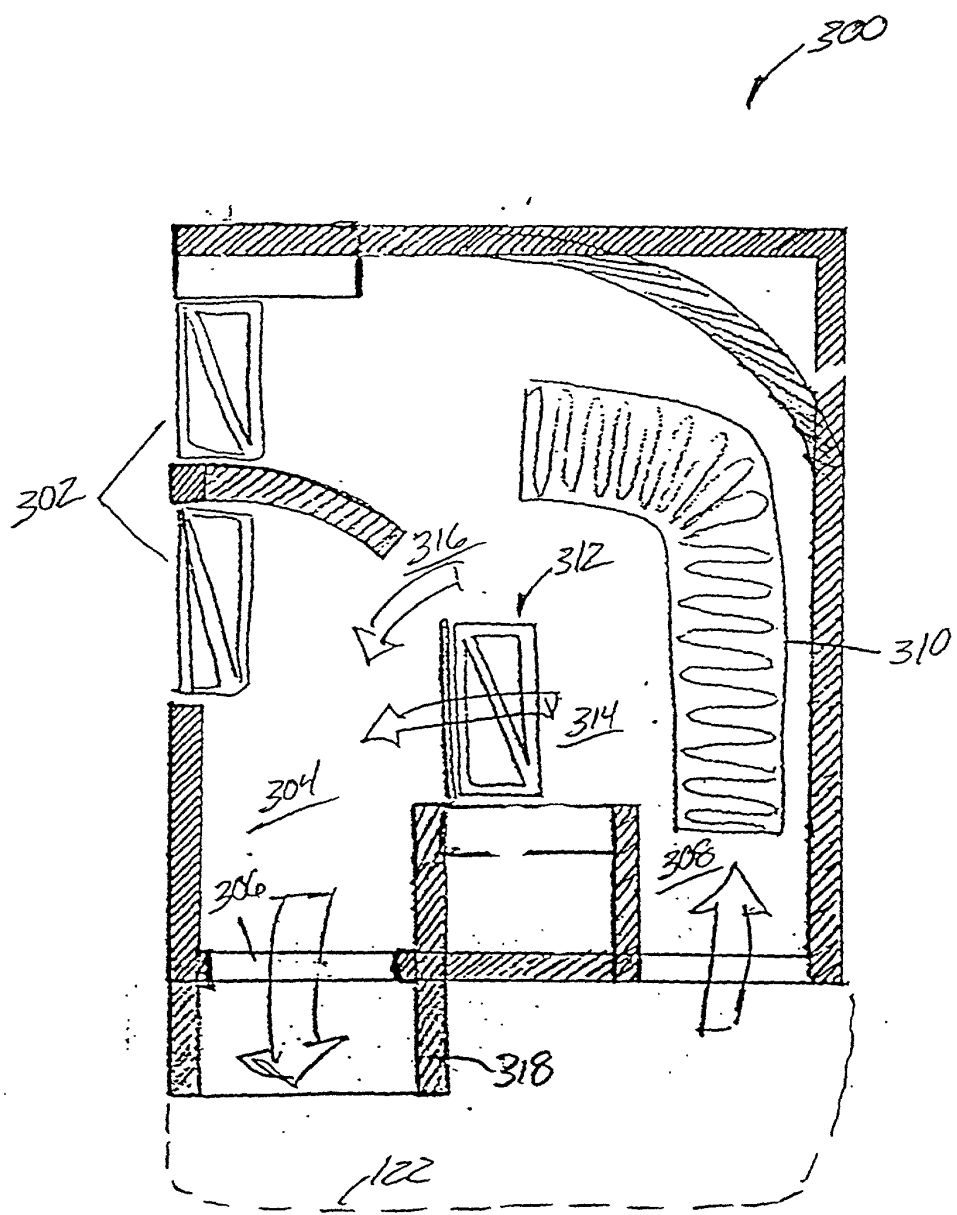
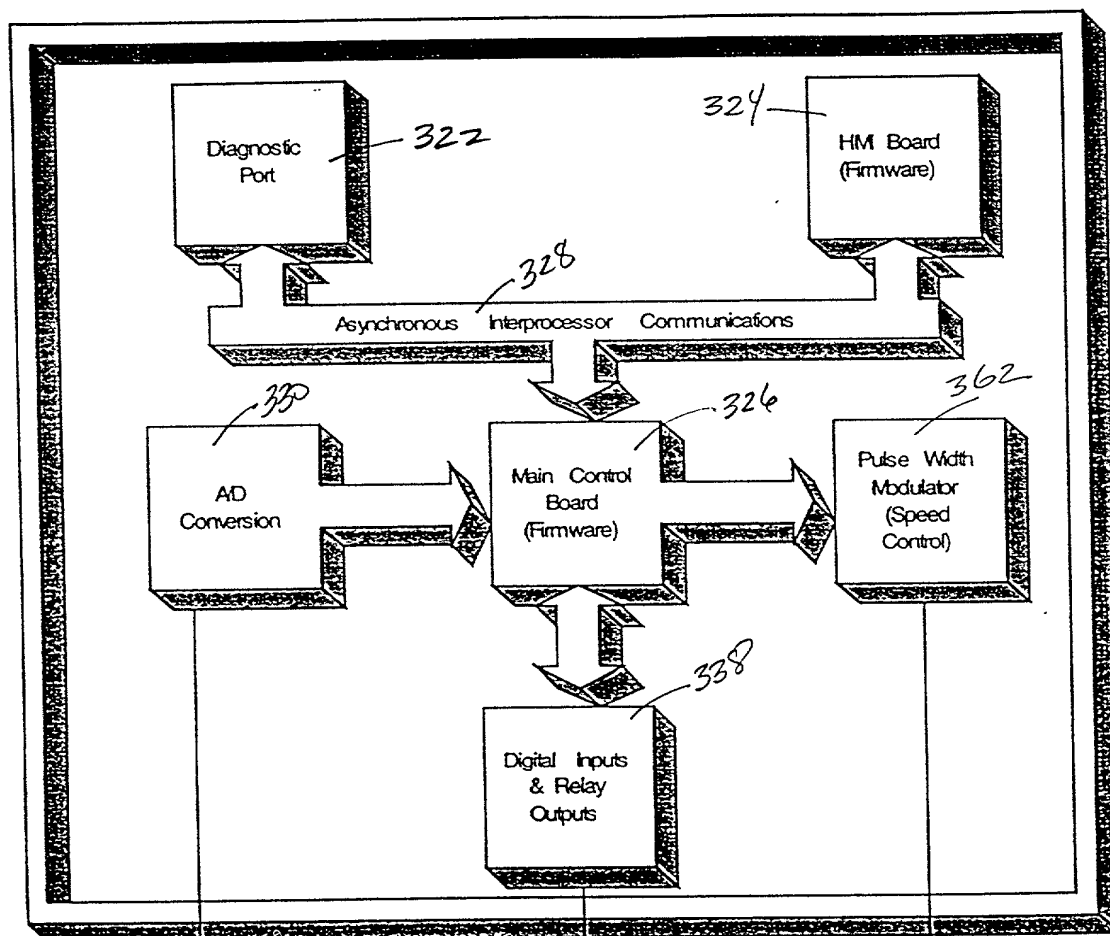


FIG. 7

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320



- FF Temp 2 - 332
- FF Temp - 332
- Feature Pan Temp - 276
- FZ Temp - 334
- Evap. Temp - 336

- Cond. Fan Tach. - 340
- Evap. Fan Tach. - 342
- Crusher Solenoid - 344
- Auger Motor - 346
- Personality Inputs (Site Specific) - 348
- Water Dispensor Valve - 350
- Encoders for Set Points - 352
- Compressor On/Off - 354
- Defrost Heater - 356
- Door Detector - 358
- Muffin Damper - 360
- Feature Pan Damper 1 - 260
- Feature Pan Damper 2 - 266
- Feature Pan Heater - 270
- Condensor Fan - 364
- FF Fan - 366
- Evaporator Fan - 368
- Feature Pan Fan - 274

FIG. 8

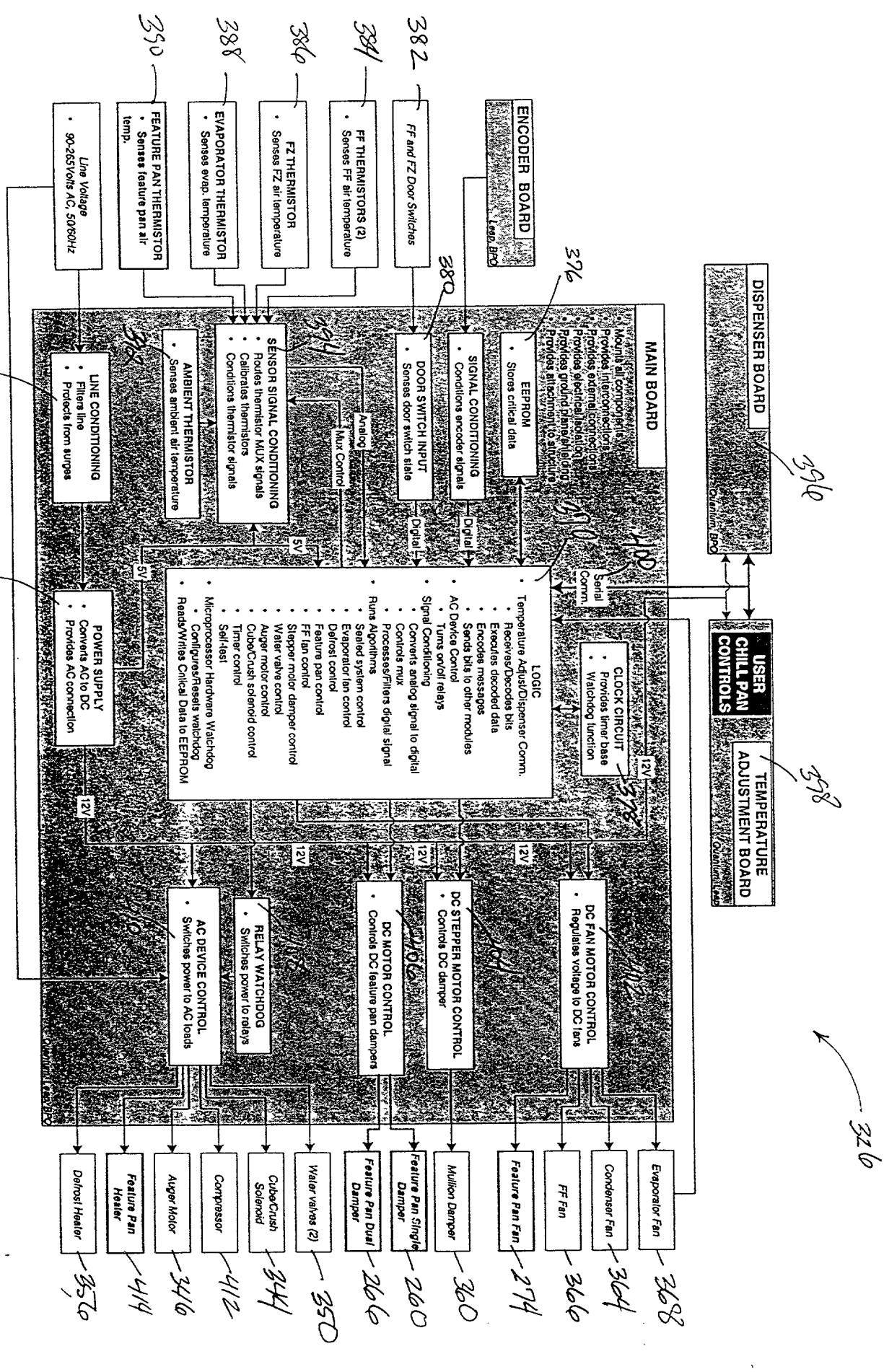


FIG. 9

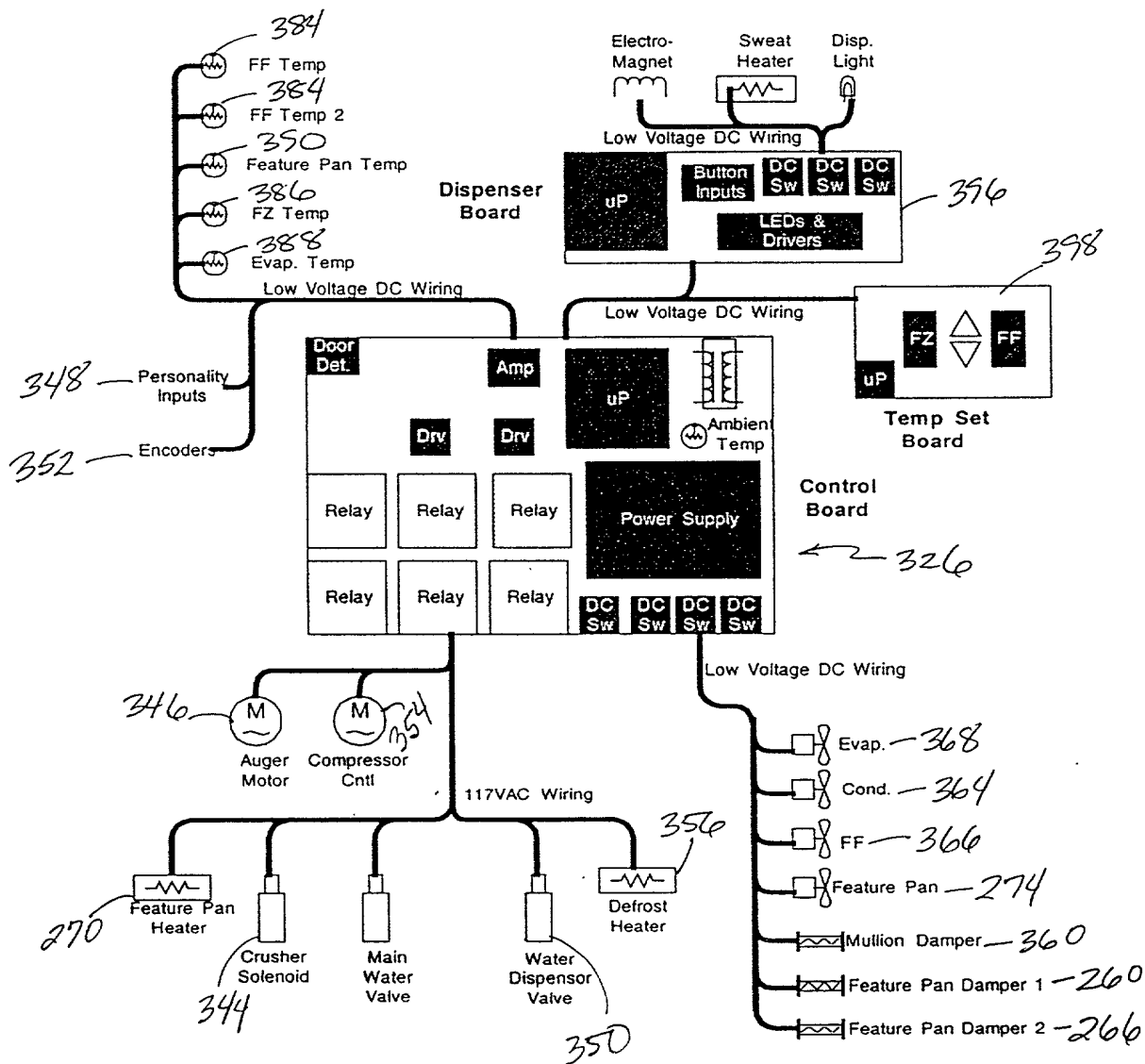


Fig 10

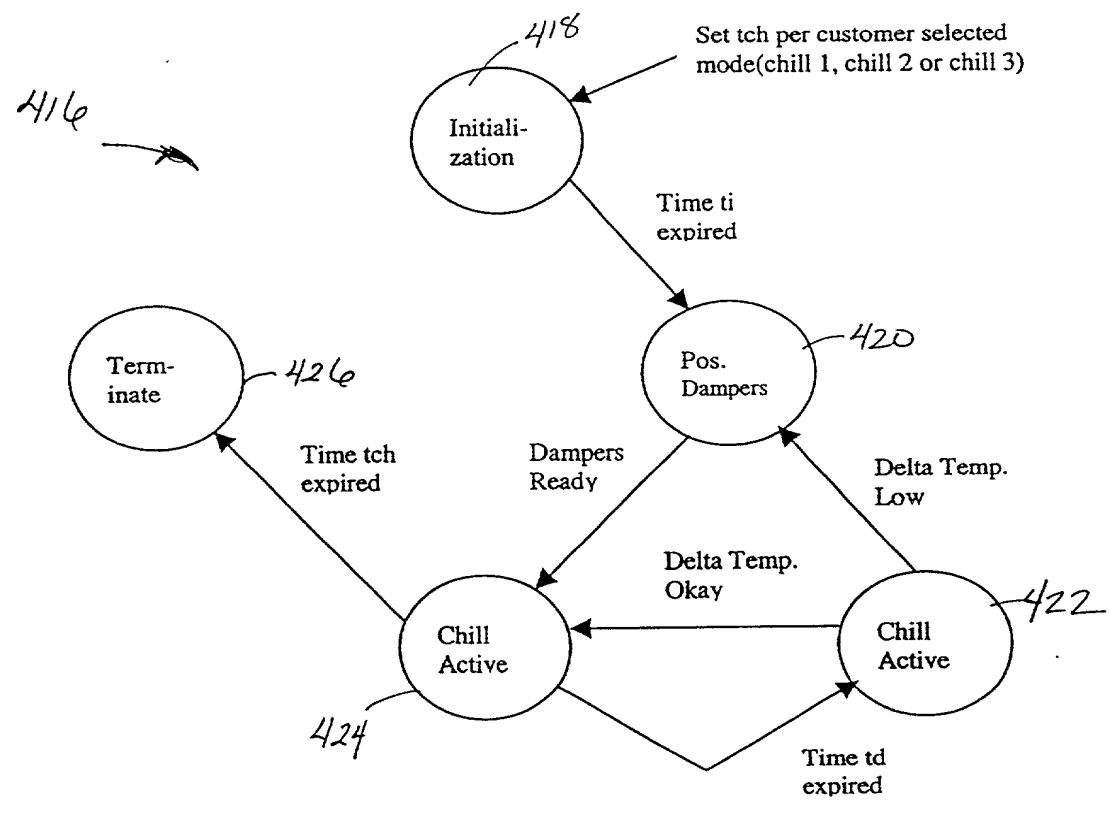
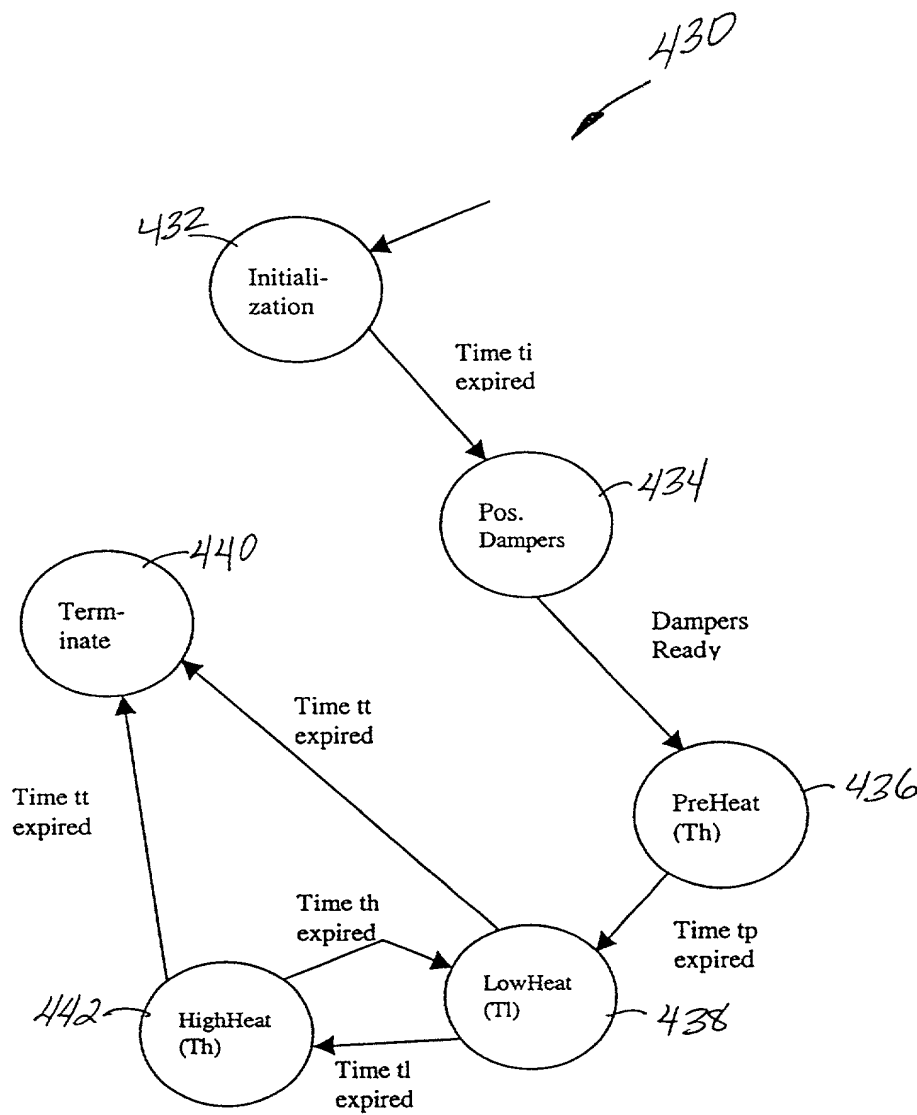


Fig. 12



Initialization: Shuts off heater and turns on fan. This mode is implemented so that the customer interface LED that is wired in parallel with the fan will turn on as soon as the button is hit. Time ti is the initialization time and will typically be approximately one minute.

Pos. Dampers: This state shuts off the fan, sets the single damper open then closes the dual damper. It then turns the fan back on. This is done for power management.

PreHeat: This state regulates the pan temperature

LowHeat

HighHeat:

Terminate: This mode closes both dampers and shuts off the fan then returns to idle.

Fig. 13

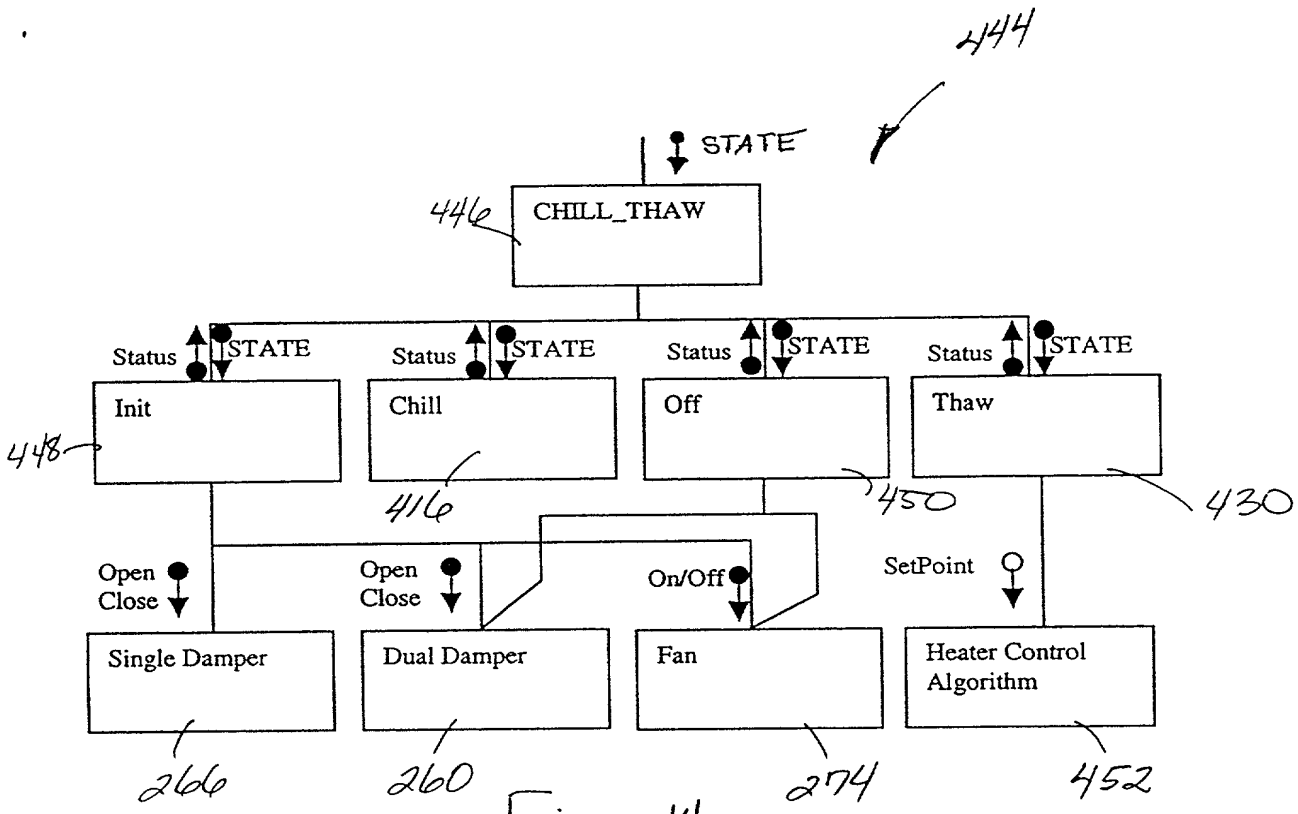


Fig. 14

Downloaded from ascelibrary.org by Seattle University on 06/01/15

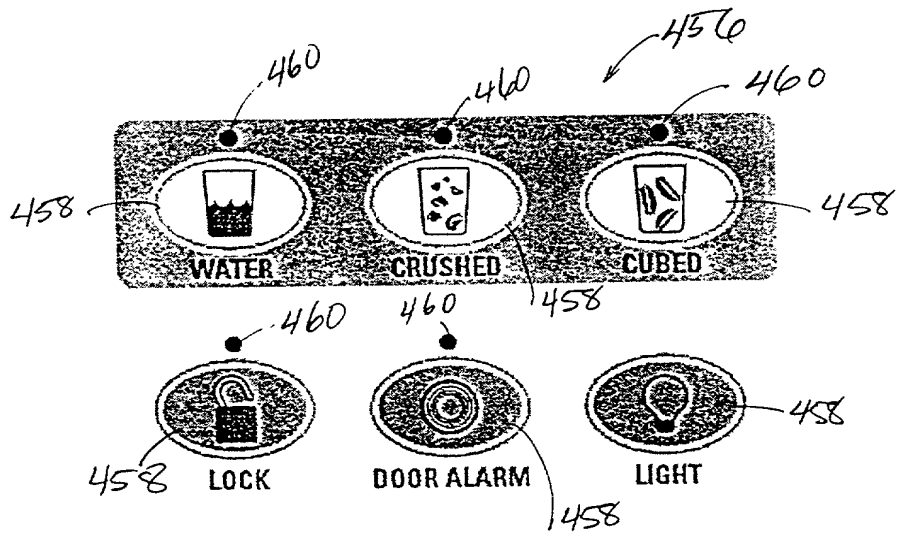


FIG. 15

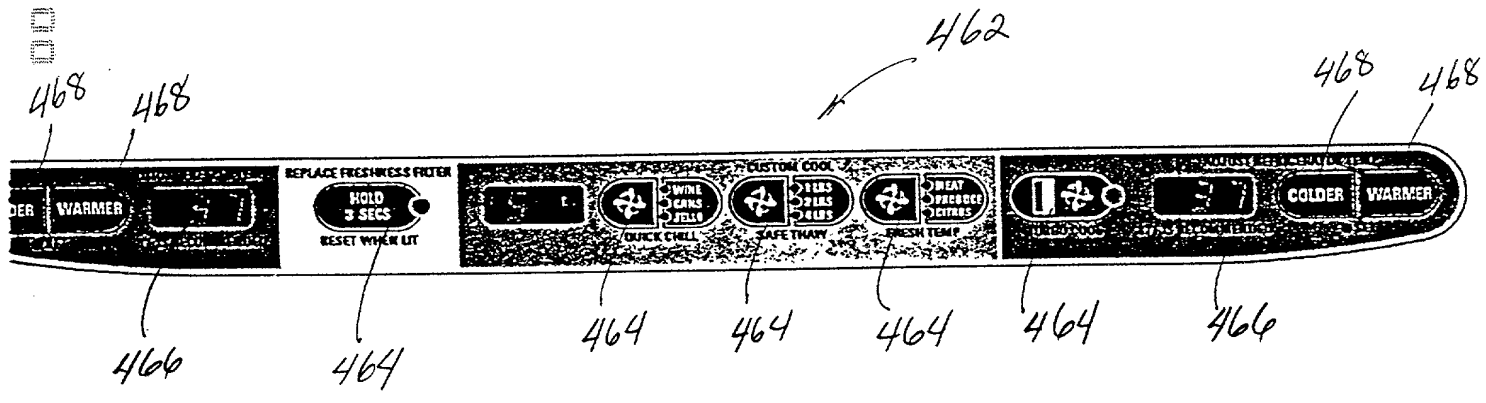


FIG. 16

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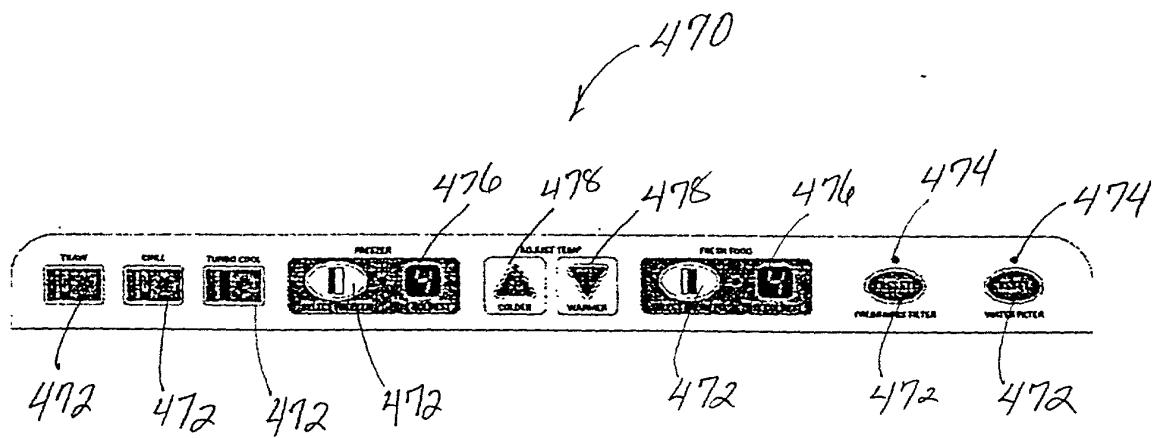


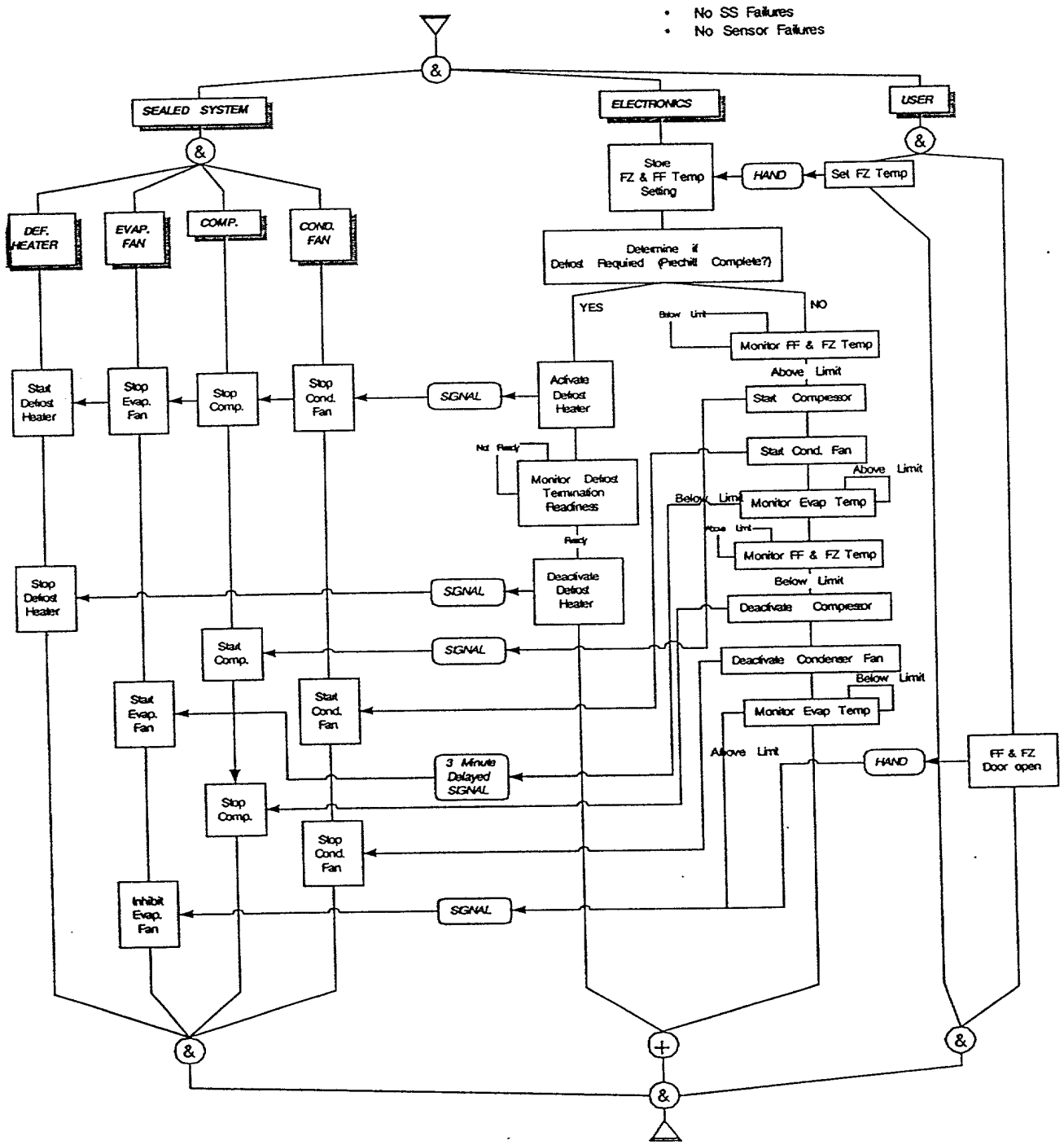
Figure 17.

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480

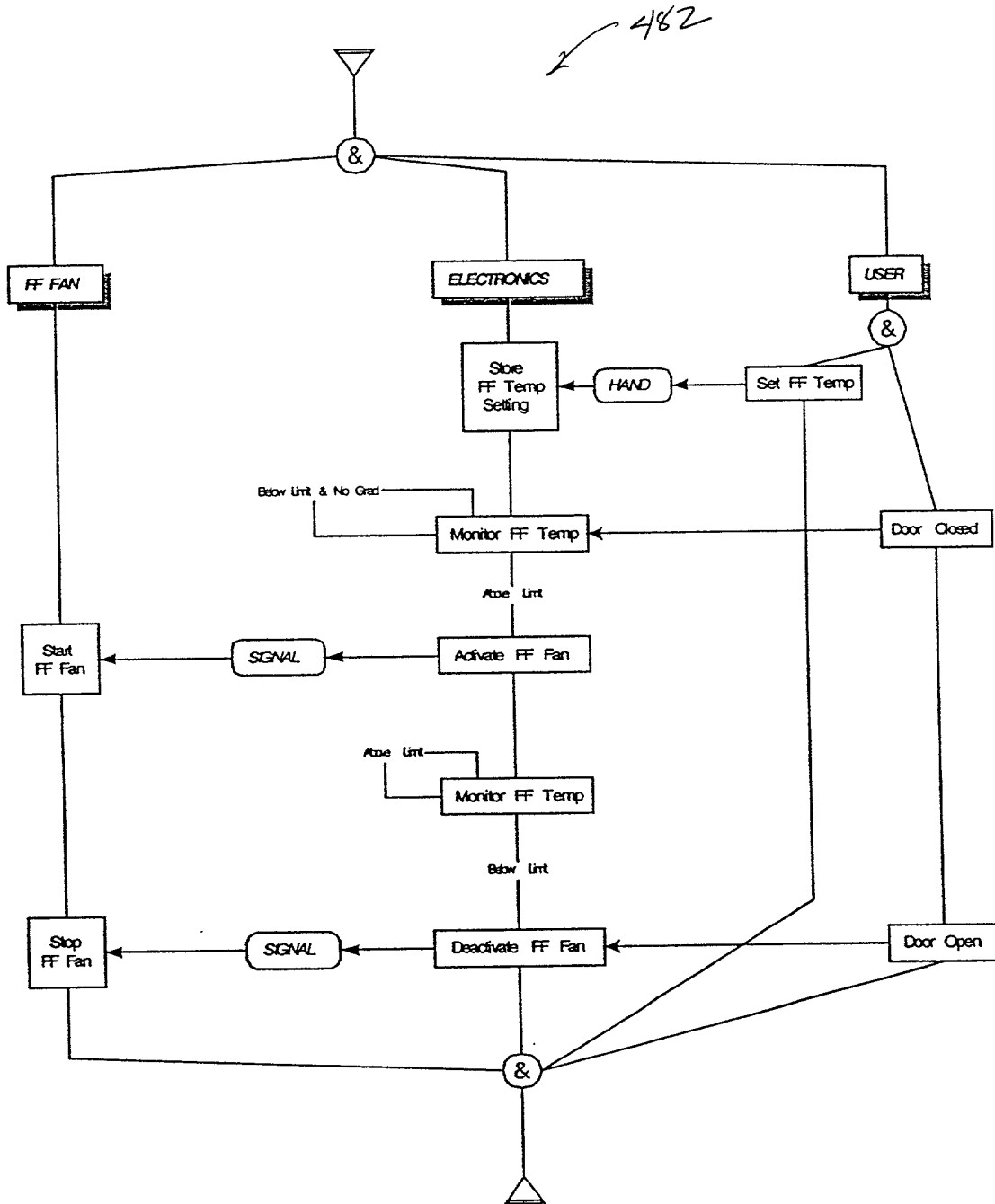
Sealed System Assumptions:

- No SS Failures
- No Sensor Failures



Sealed System Behavior Diagram

Fig 18



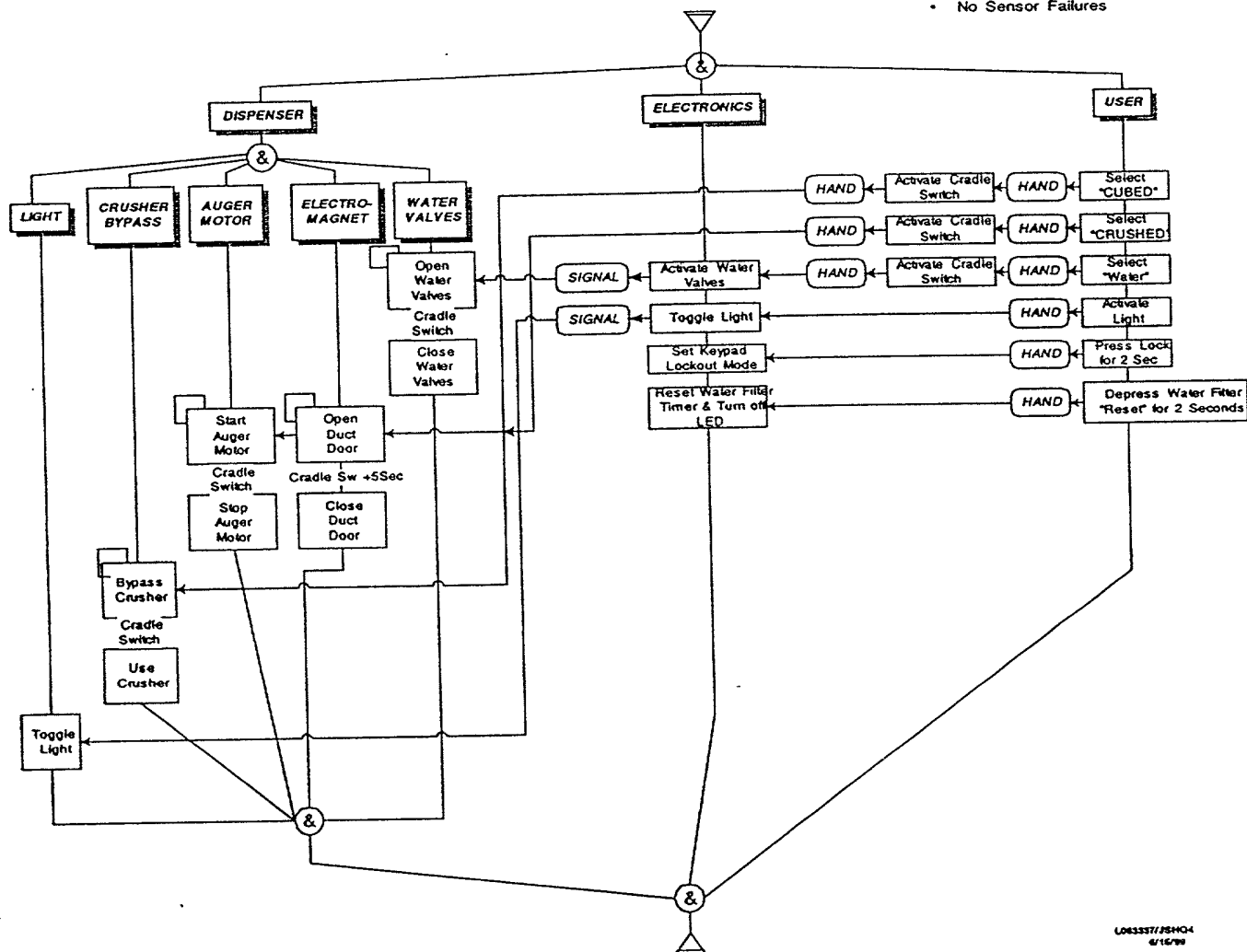
Fresh Food Fan Behavior Diagram

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Dispenser Assumptions:

- No Sensor Failures



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Dispenser Behavior

Fig 20

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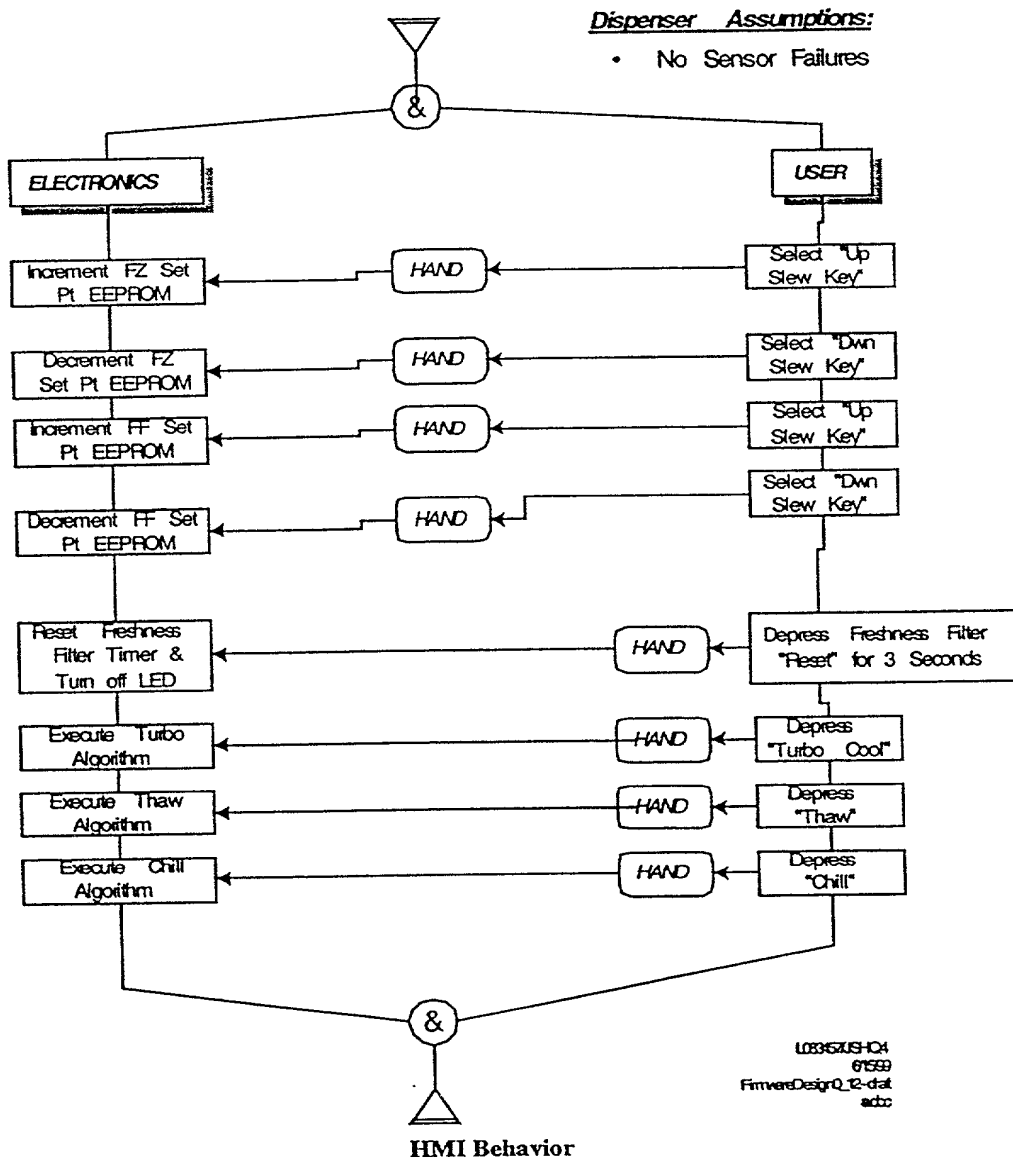
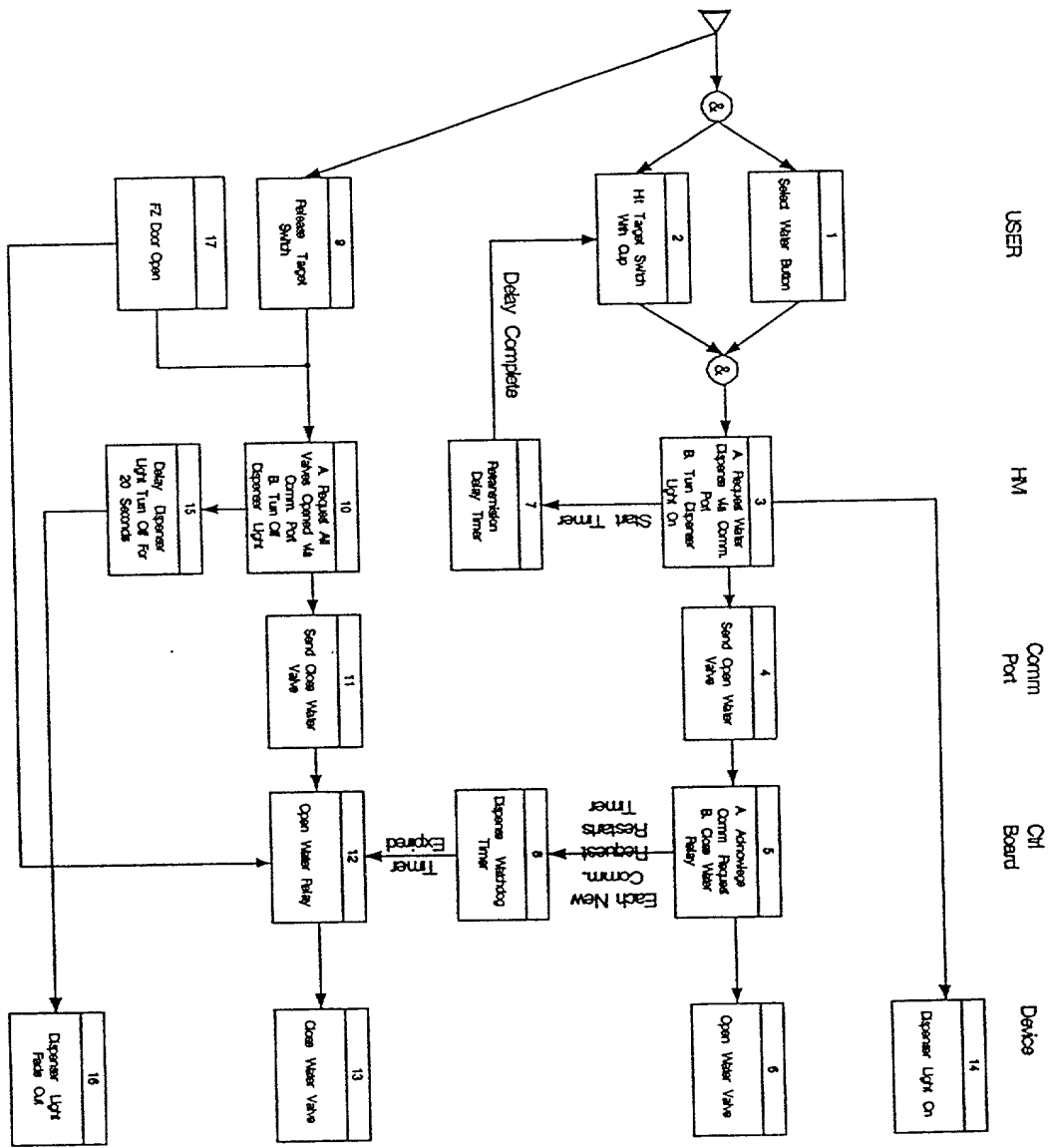


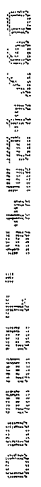
Fig 21

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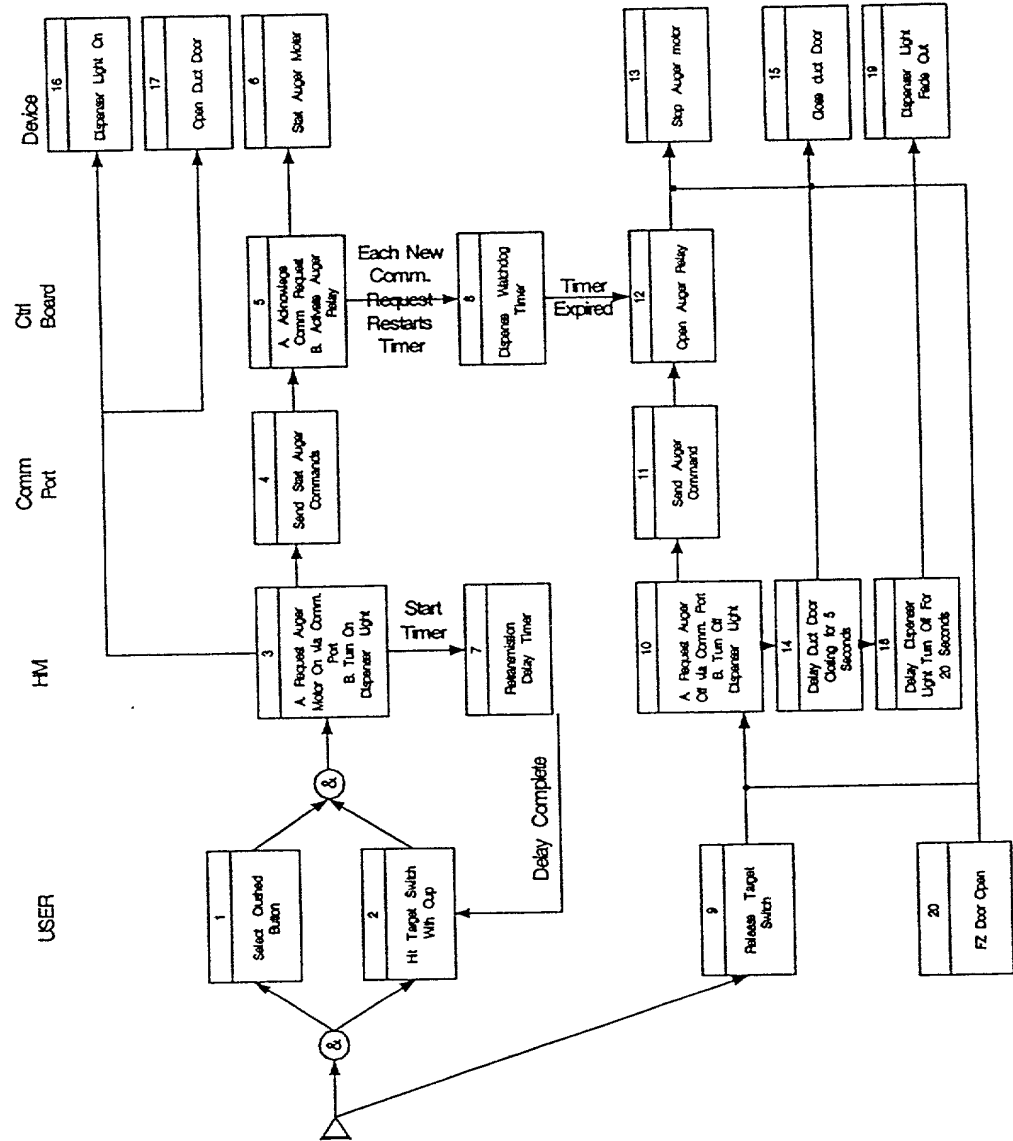
Water Dispenser Interactions

Fig 22



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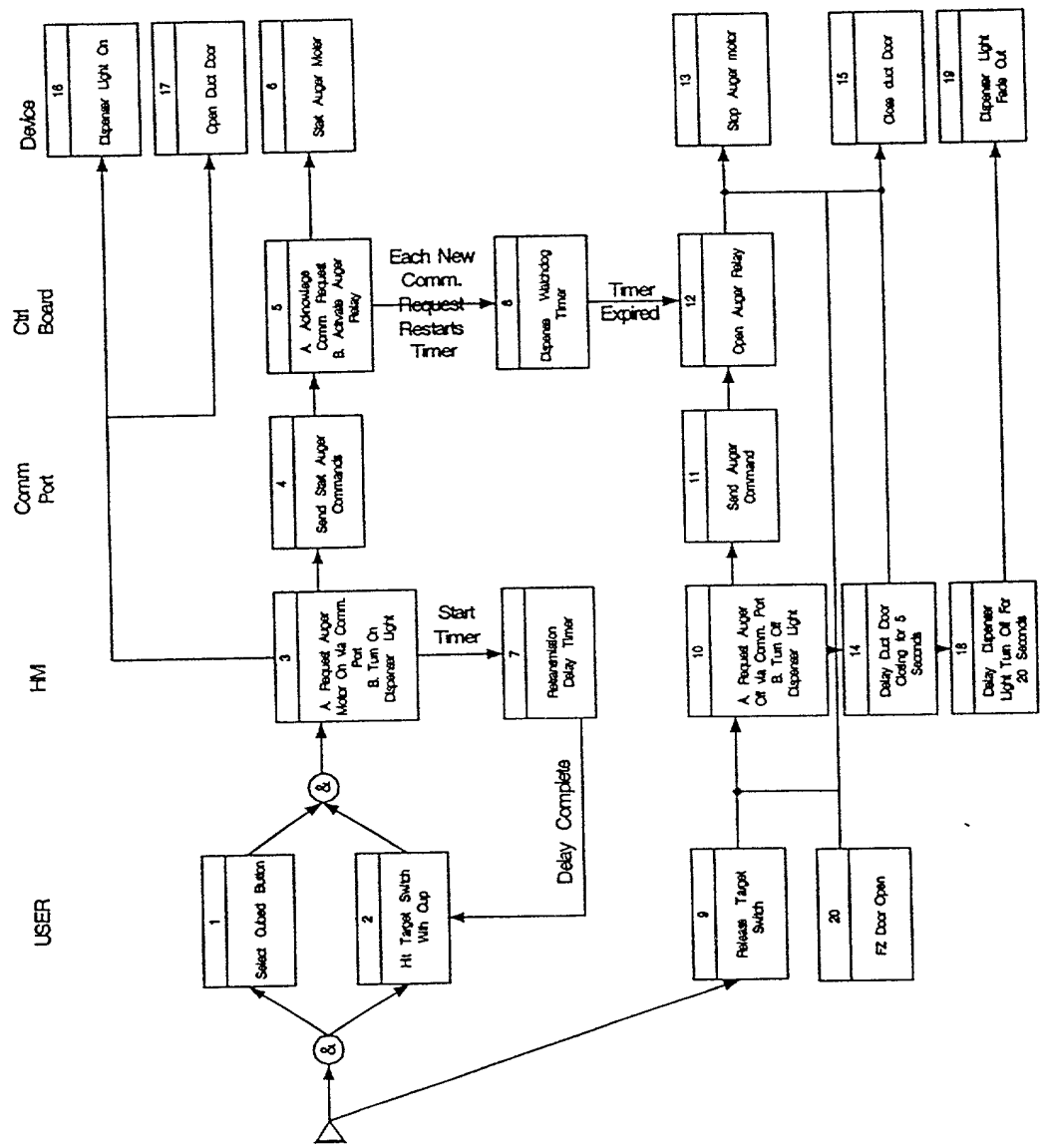
490



Crushed Ice Dispenser Interactions

Fig 23

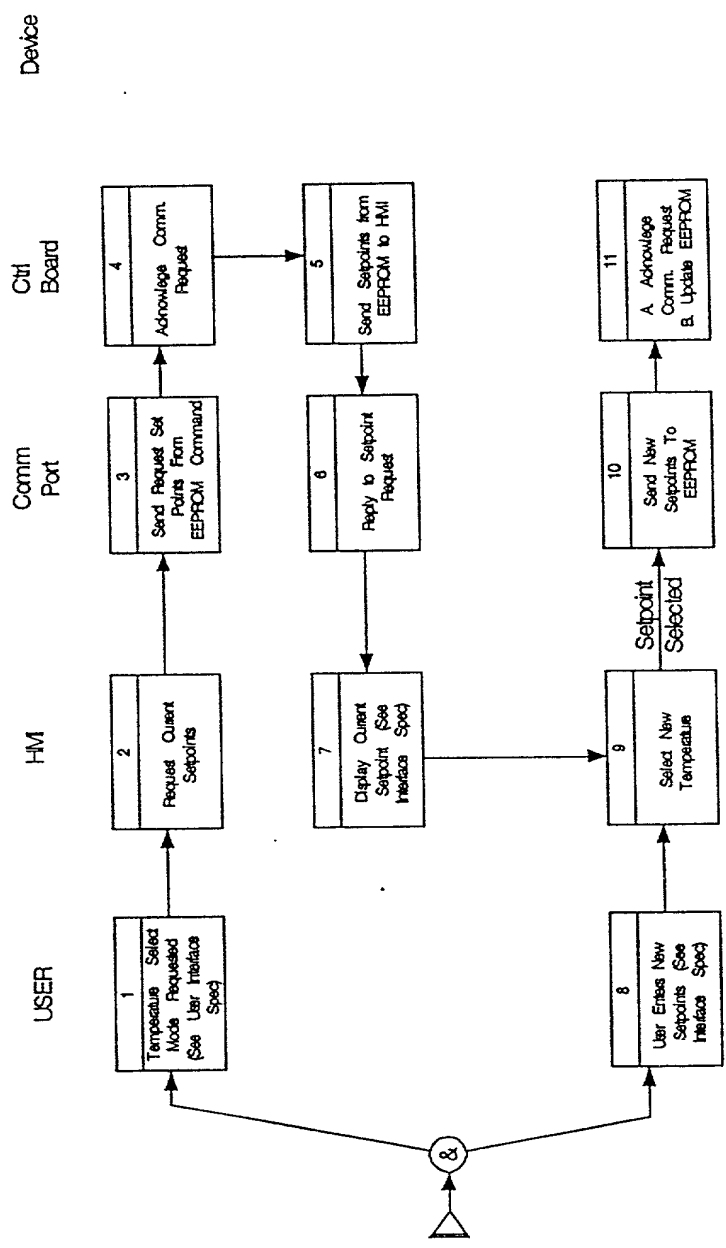
492



Cubed Ice Dispenser Interactions

Fig 24

494

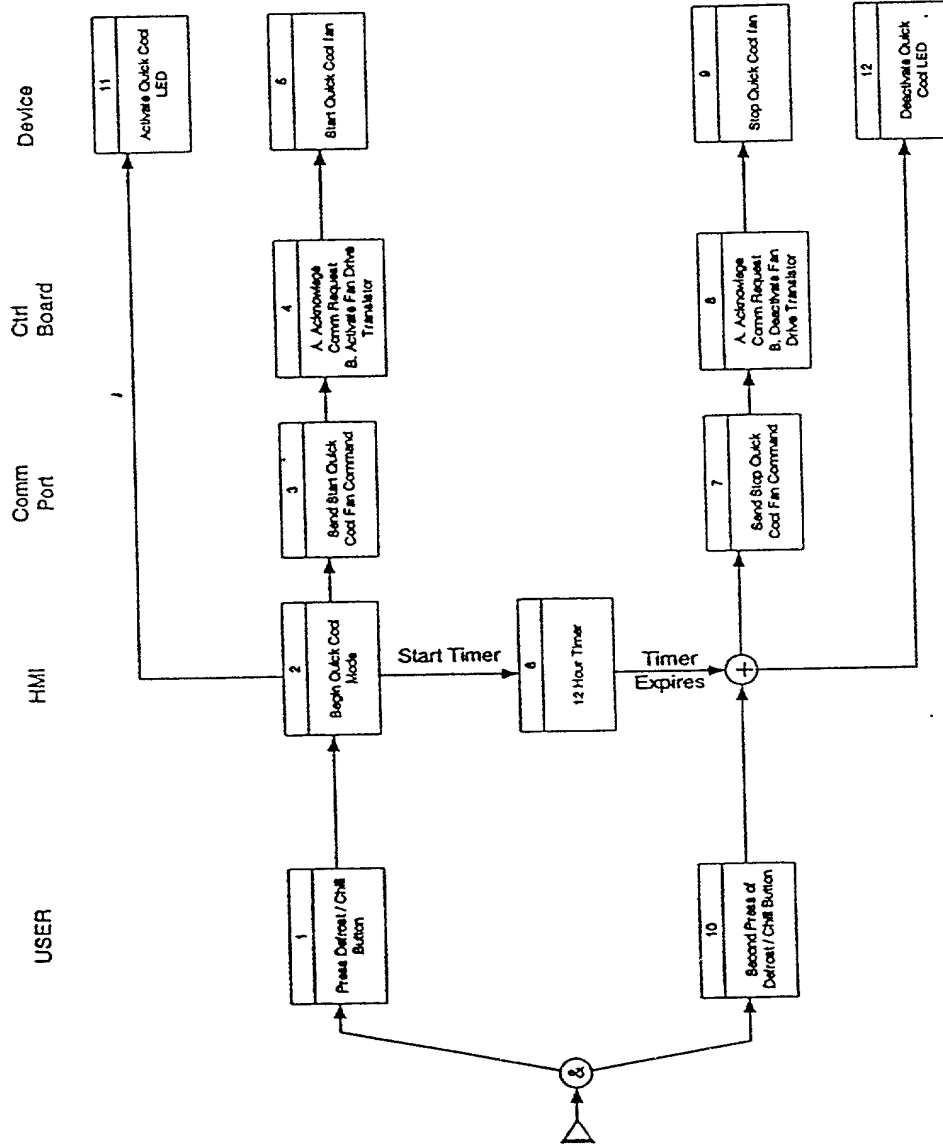


NOTE: Setpoint Selected implies that the final selection has been made and that the selection has timed out.

Temperature Setting Interaction Diagrams

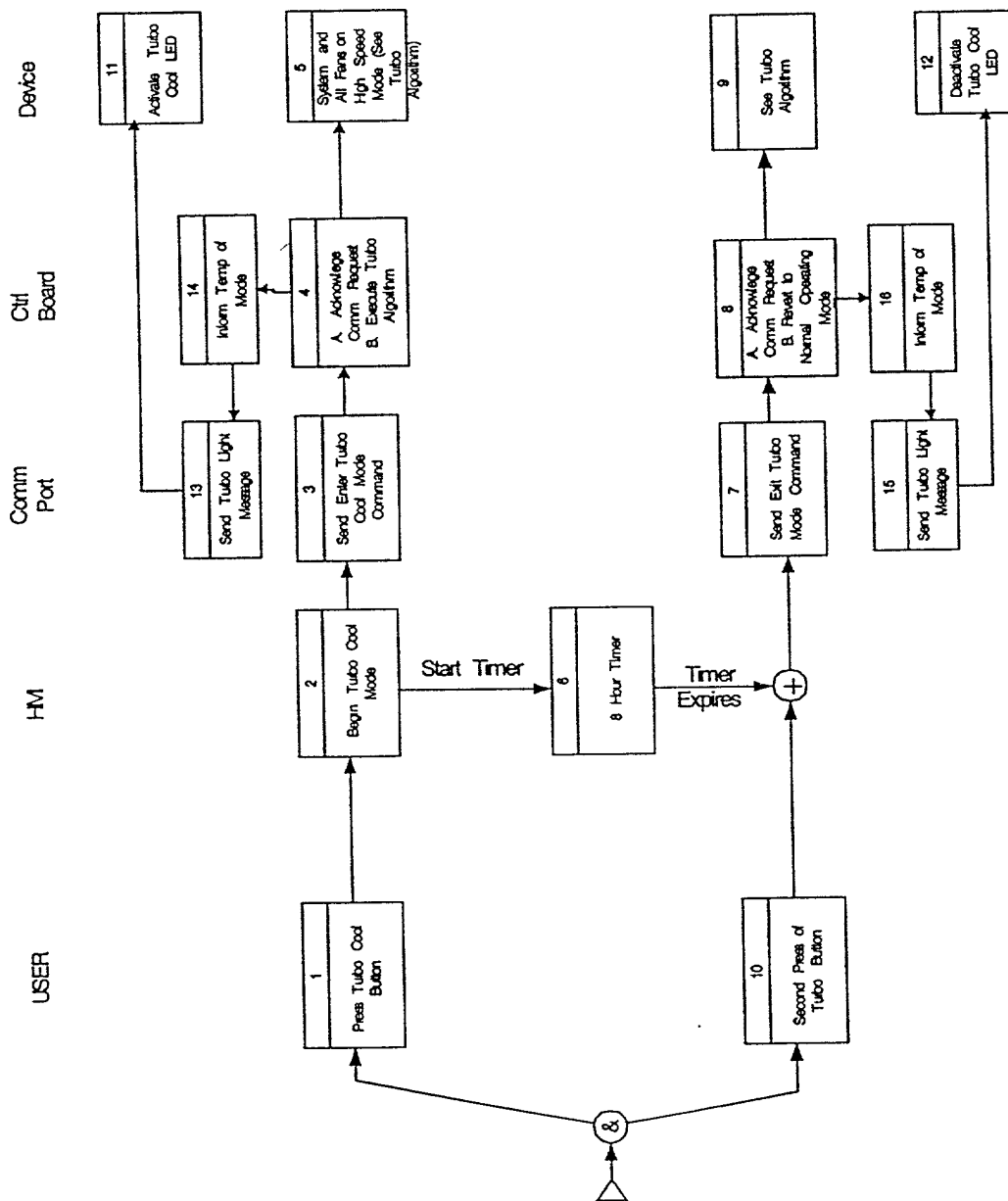
Fig 25

496



Quick Chill Interaction Diagram

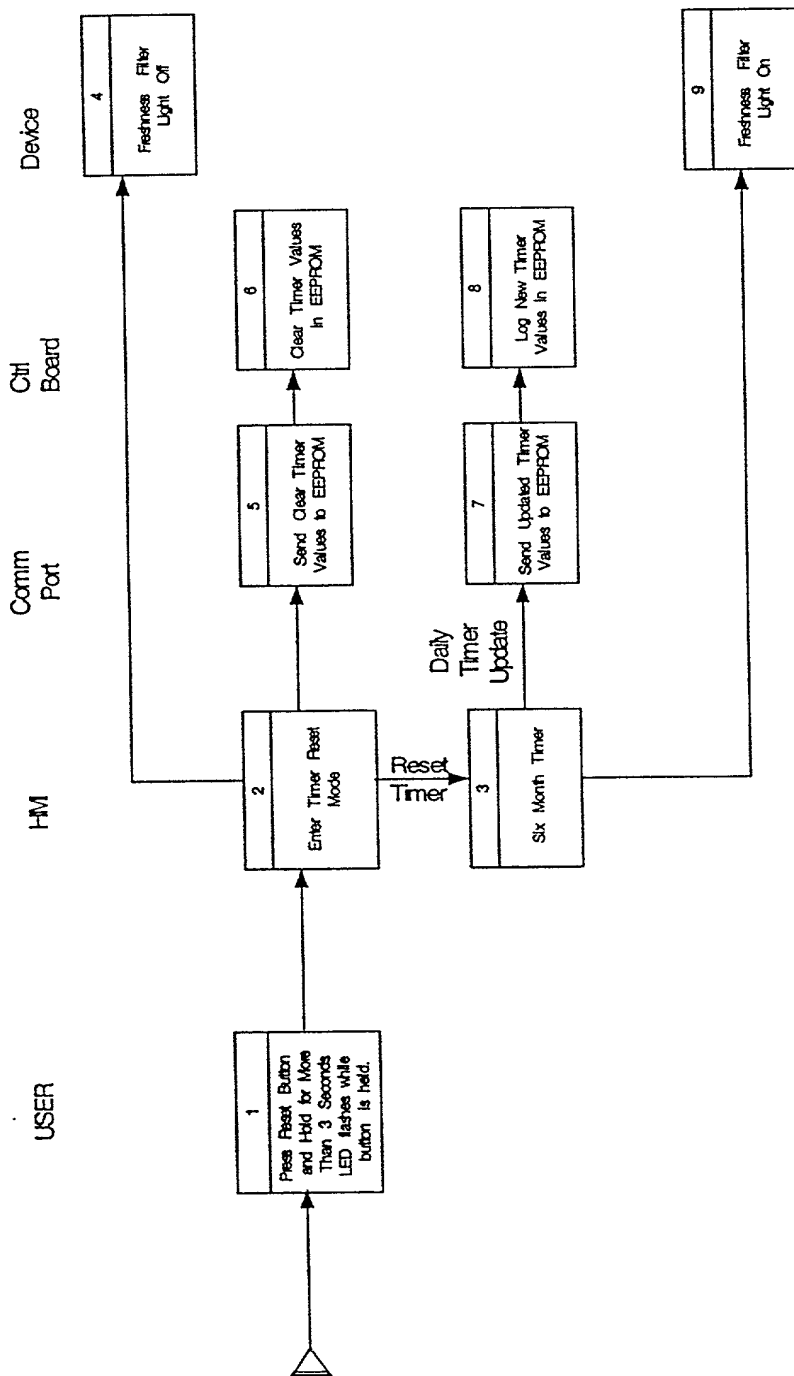
F.926



Turbo Mode Interaction Diagram

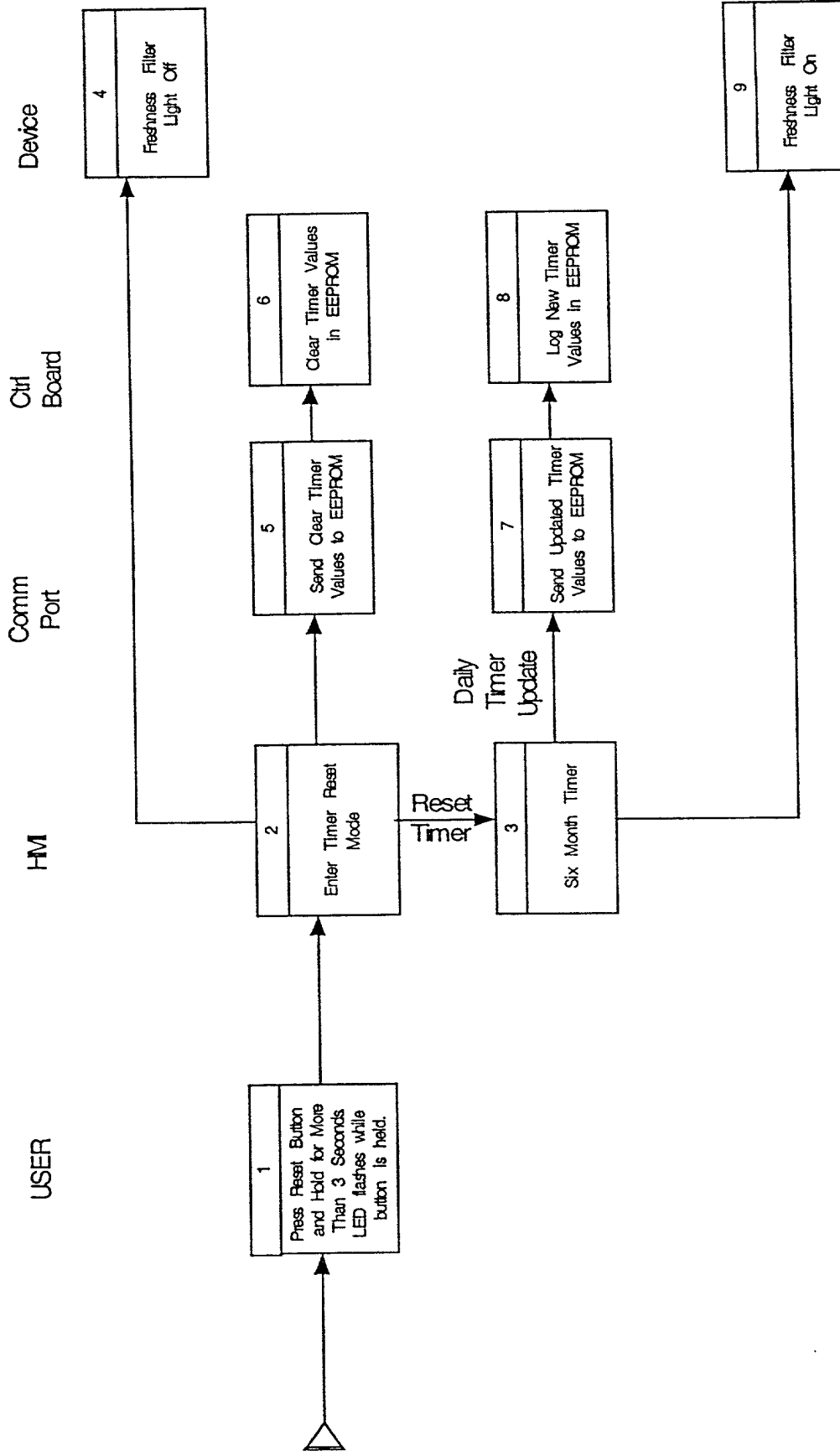
F1927

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Freshness Filter Reminder Interaction

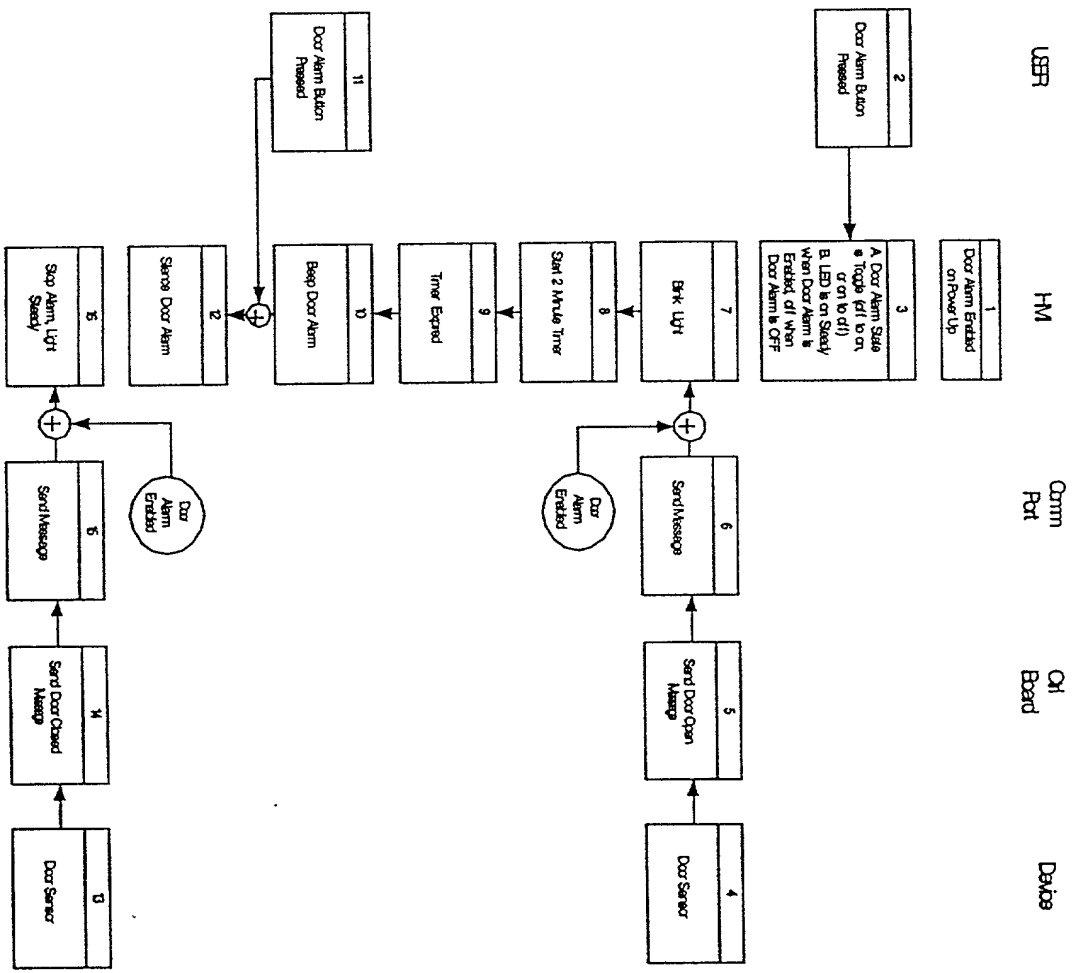
Fig 28



Water Filter Reminder Interaction

Fig 29

504

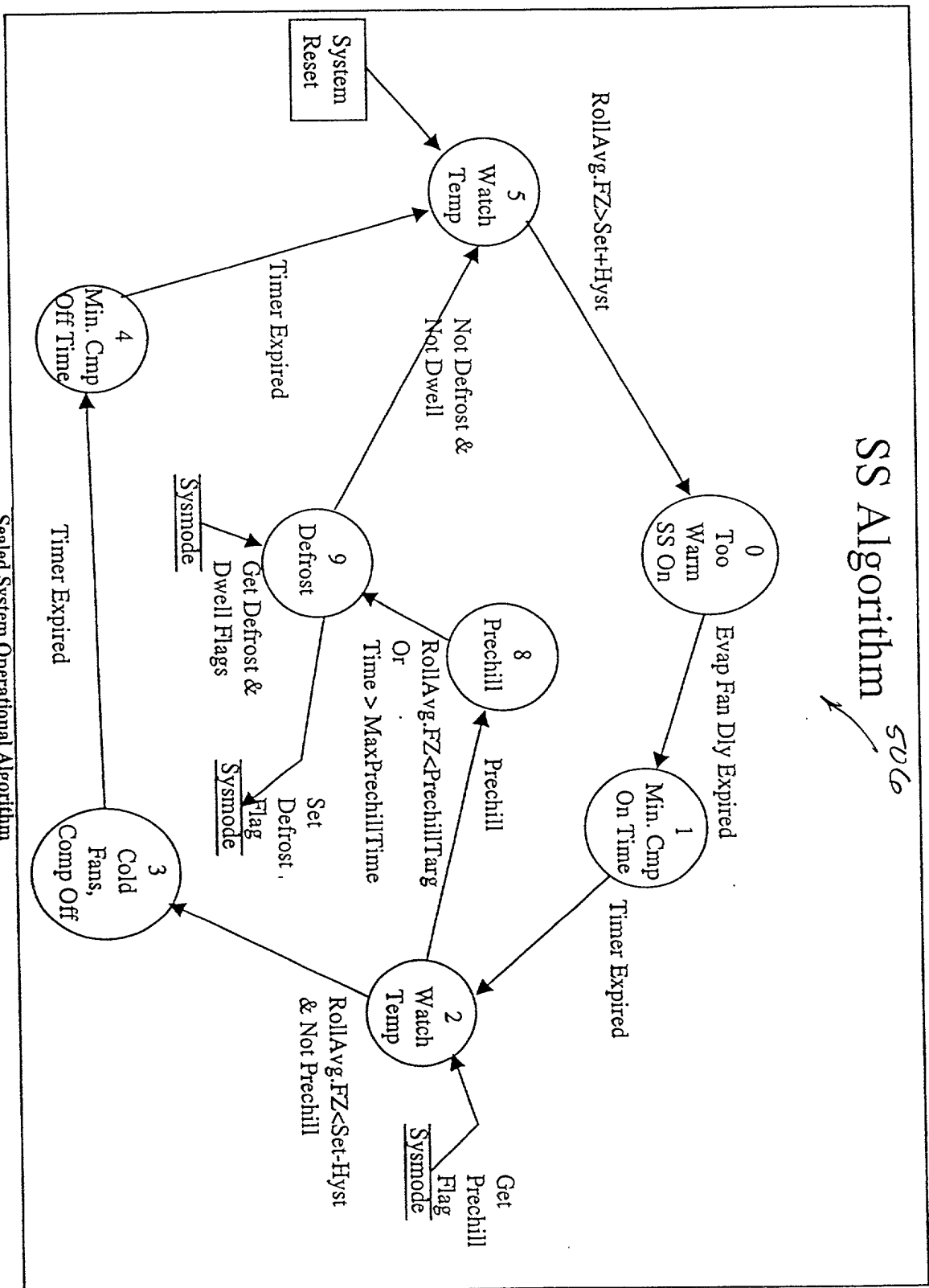


Door Open Interaction Diagram

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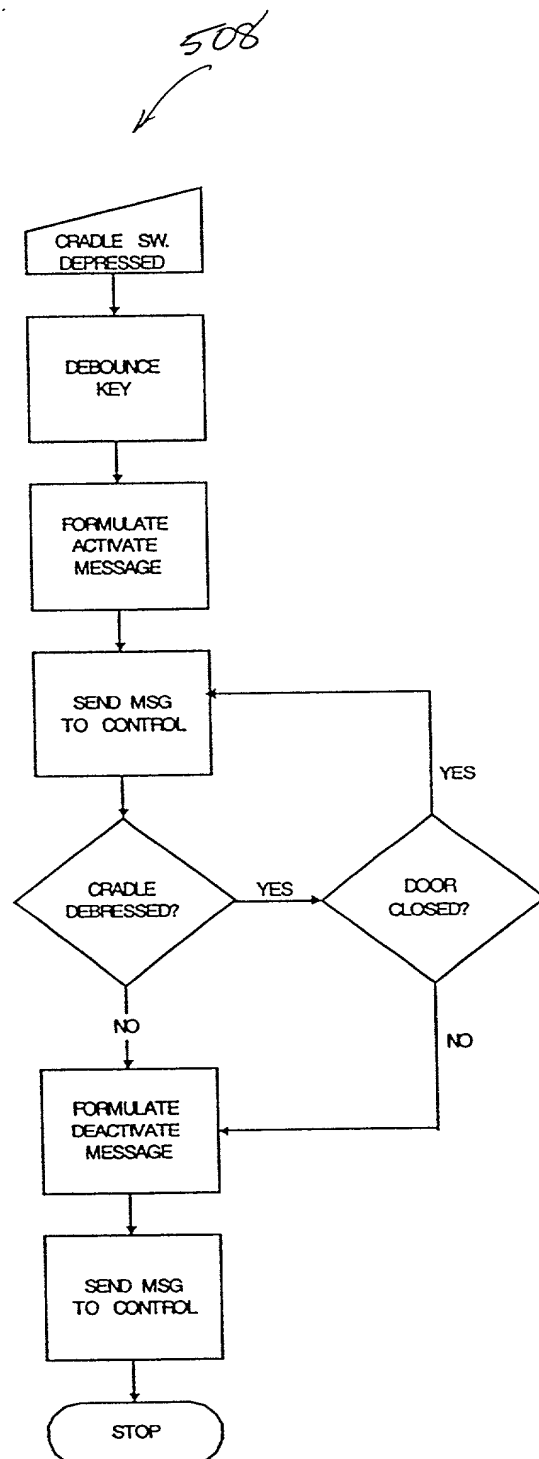
SS Algorithm

506



Scaled System Operational Algorithm

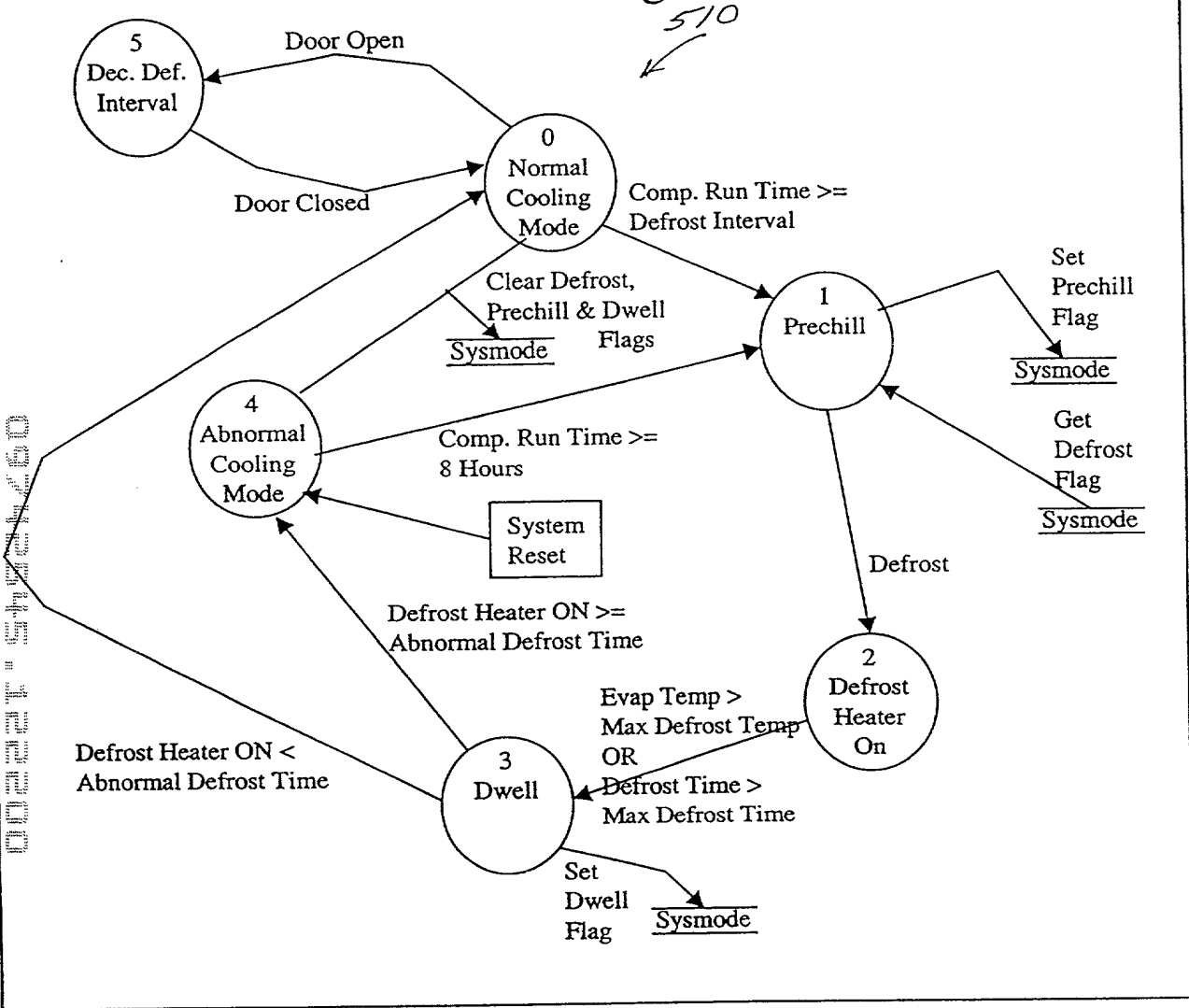
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Dispenser Control Algorithm

Fig 32

Defrost Algorithm



Defrost Control State Diagram

Fig 33

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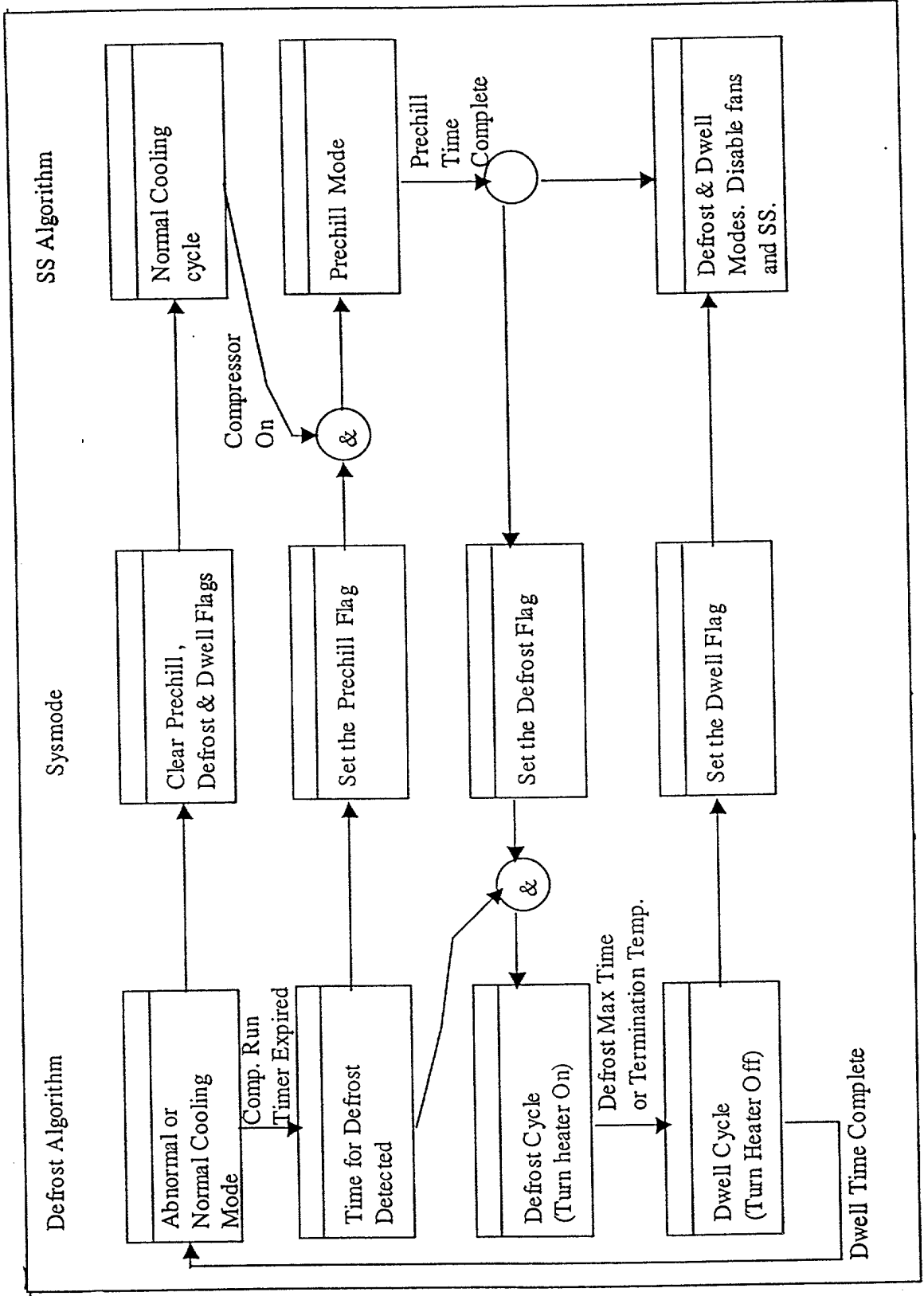


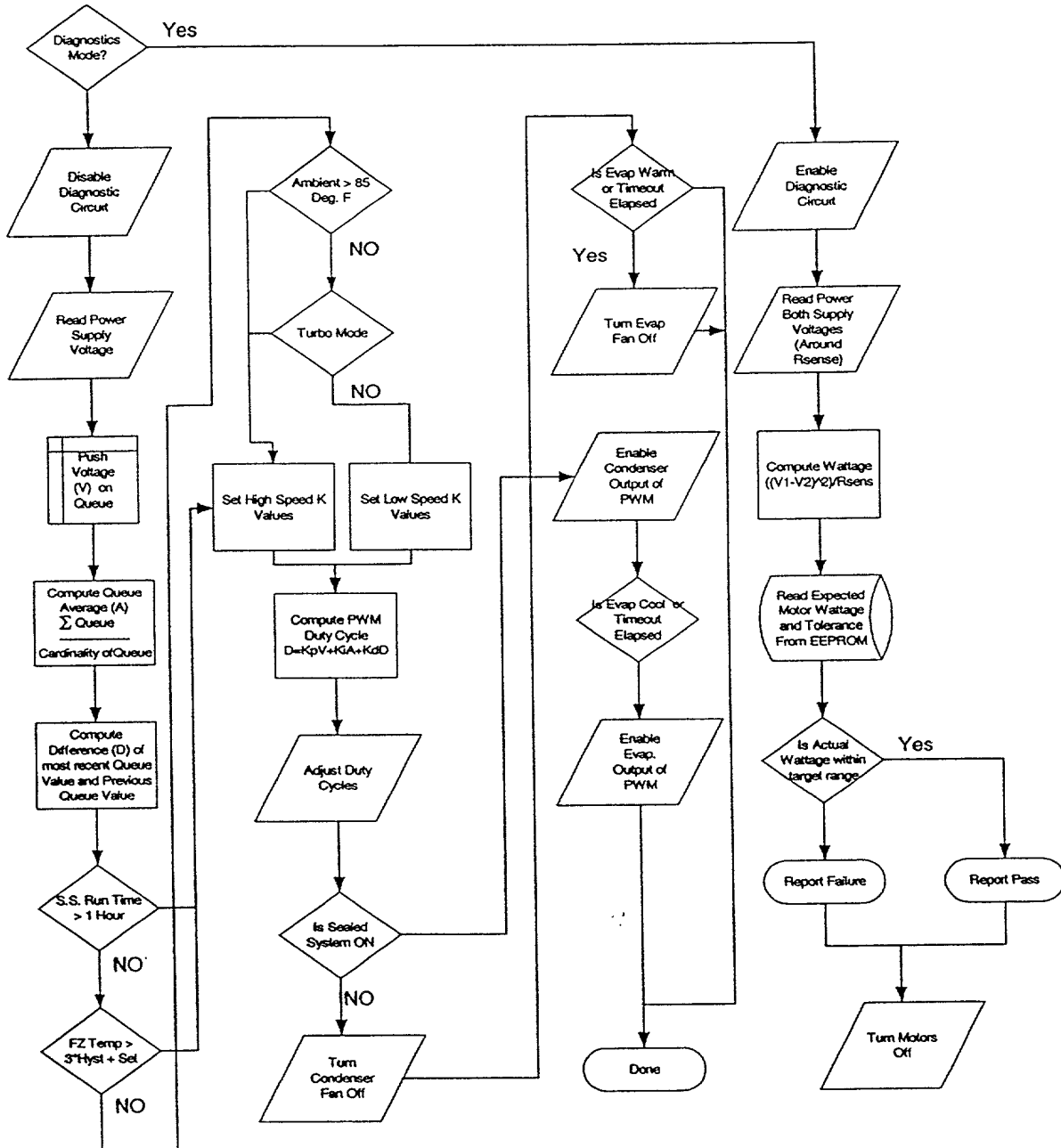
Fig 34

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Evap. & Cond. Fan Control:

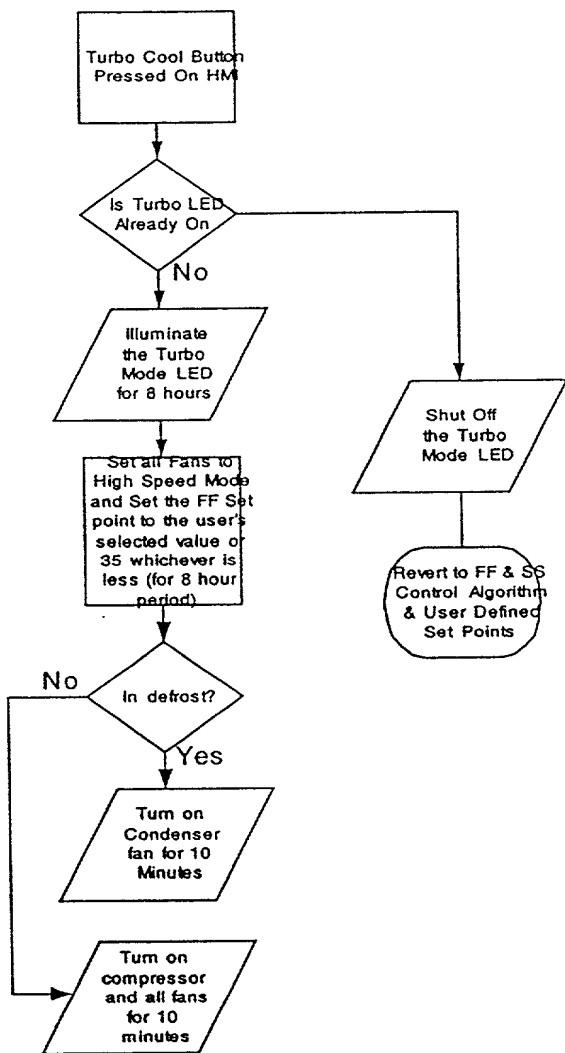


Fan Speed Control

- Notes:
1. The FF & Evaporator fans will shut off for the first five minutes that the door is open.
 2. Only one fan at a time can be on at a time during diagnostics.
 3. Once the fan has been switched to high speed, it remains in that state until the operational cycle is complete.

FIG. 35

516

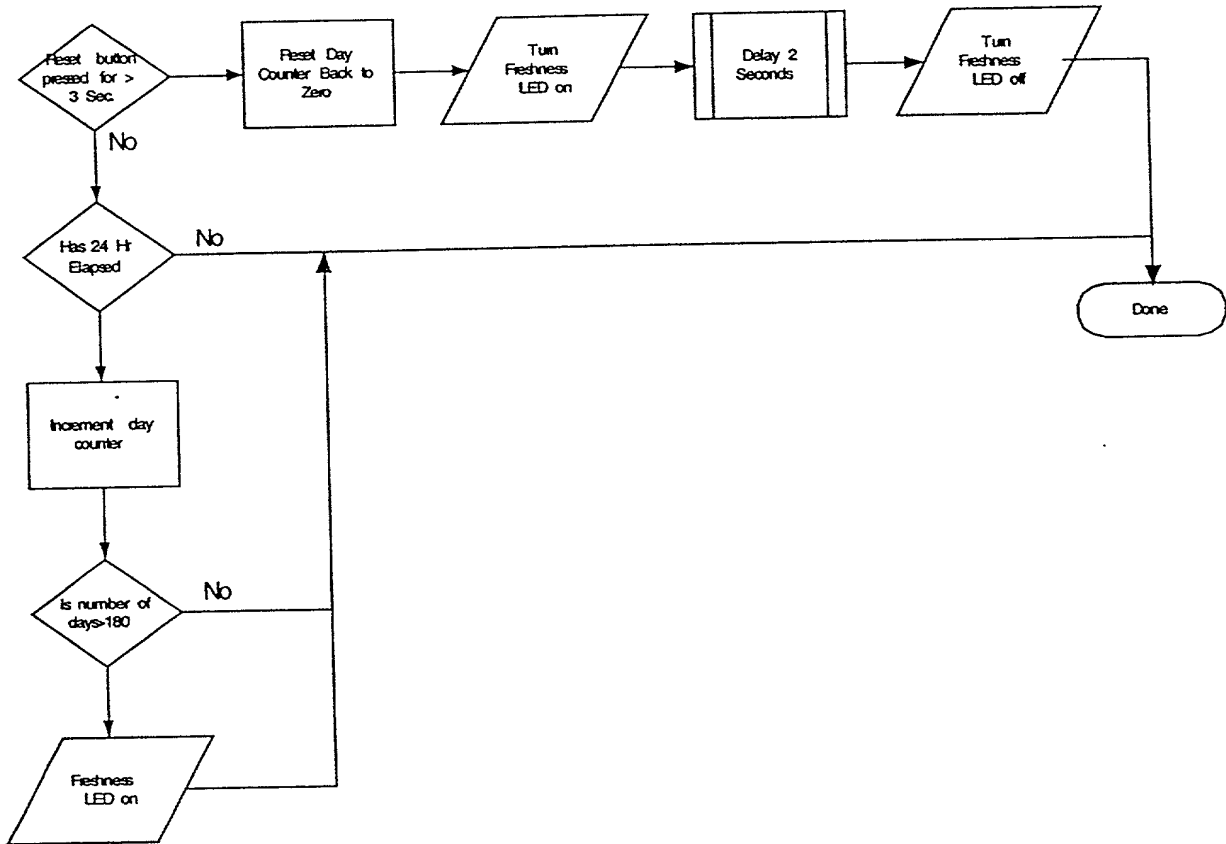


TURBO CYCLE ALGORITHM

Fig 36

318

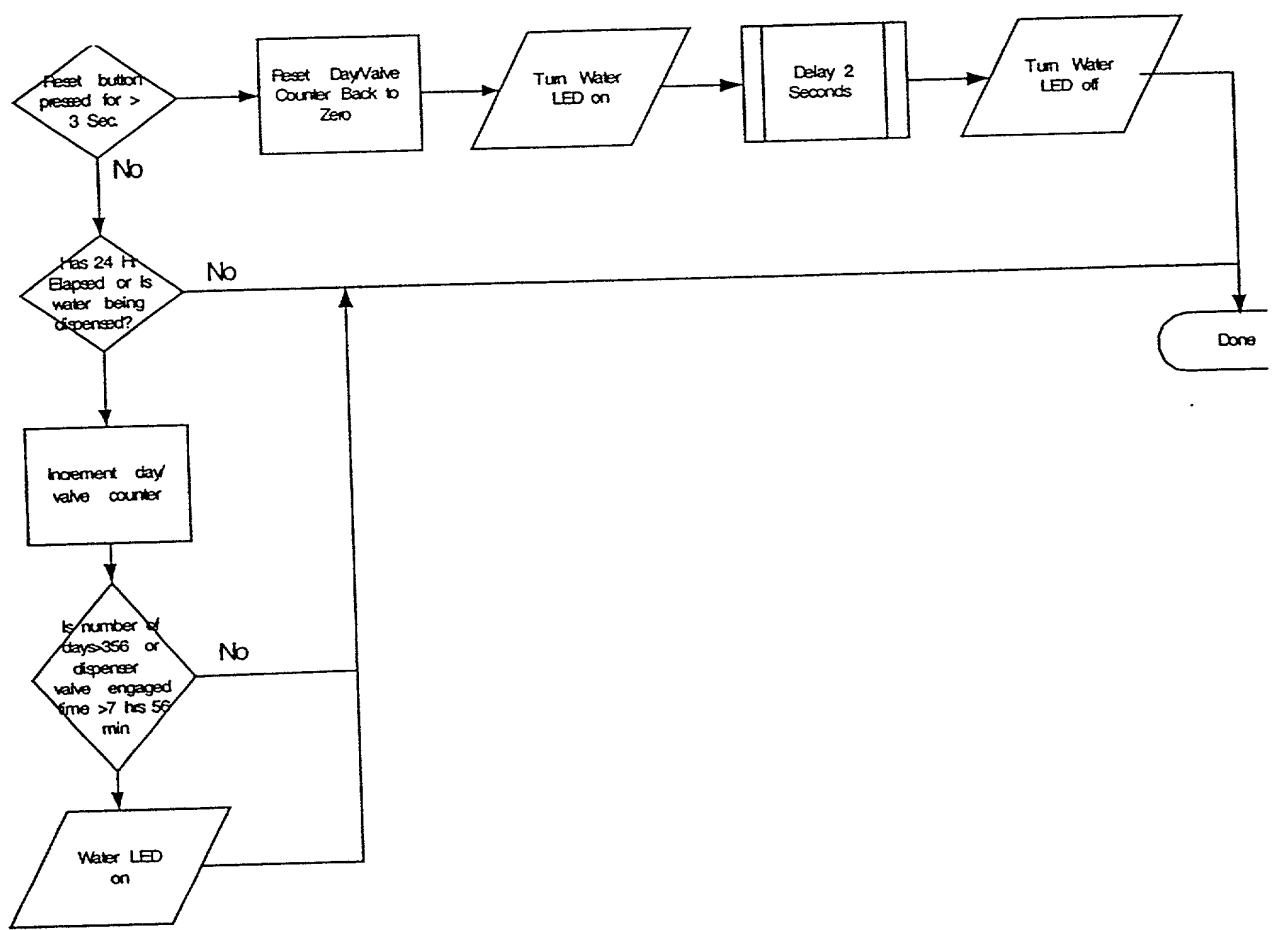
Change Freshness Filter:



Freshness Filter Reminder Algorithm

Fig 37

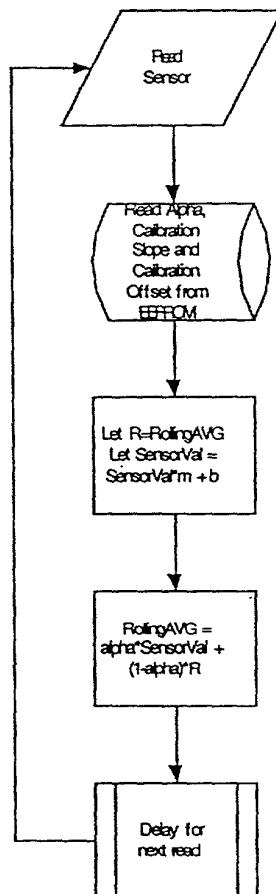
520



Water Filter Reminder Algorithm

FIG 38

522

SENSOR READ AND ROLLING AVERAGE ALGO:**Sensor Reading Algorithm****NOTE:**

Fresh food average uses this algorithm twice to create a 2nd pole filter.

Fig 39

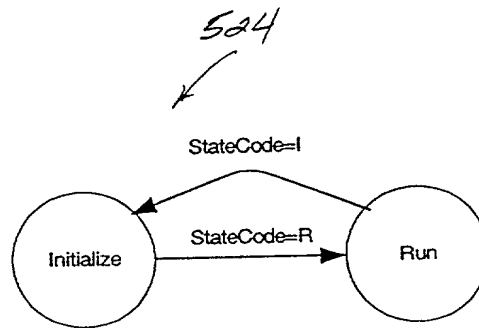


Fig. 40

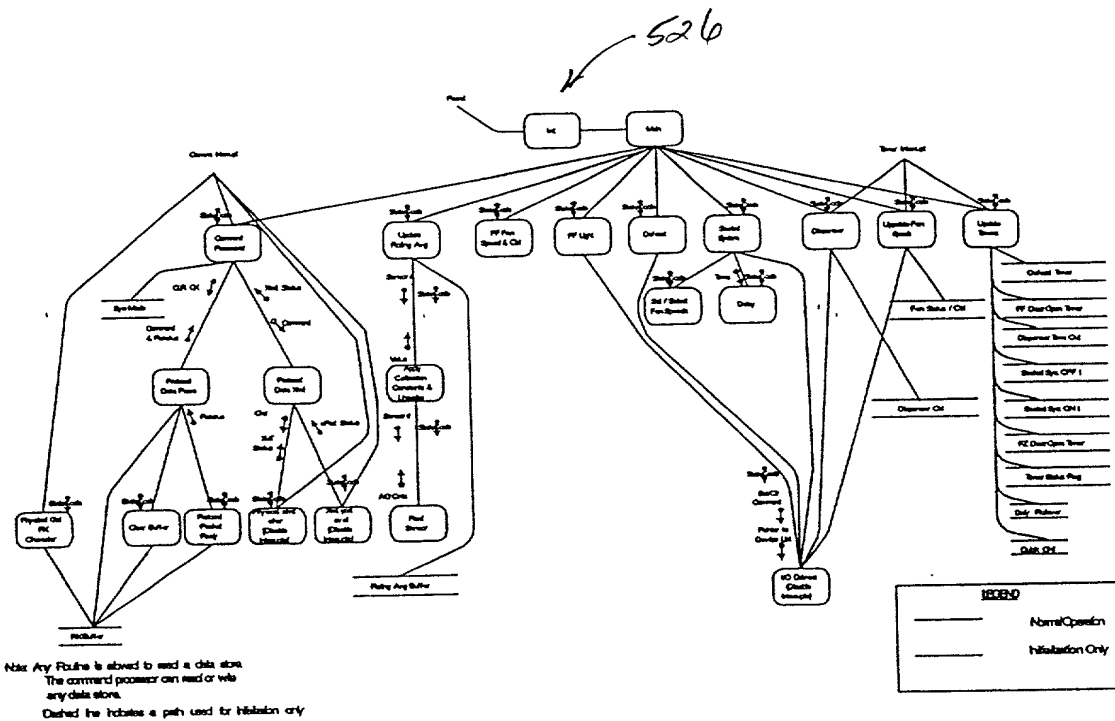
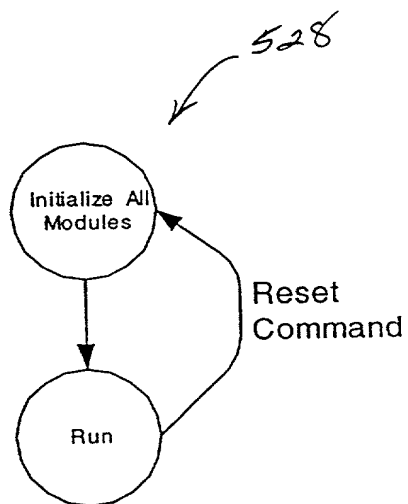


Fig. 41



STATE DIAGRAM FOR MAIN CONTROL
Fig. 42

HMI MAIN STATE MACHINE

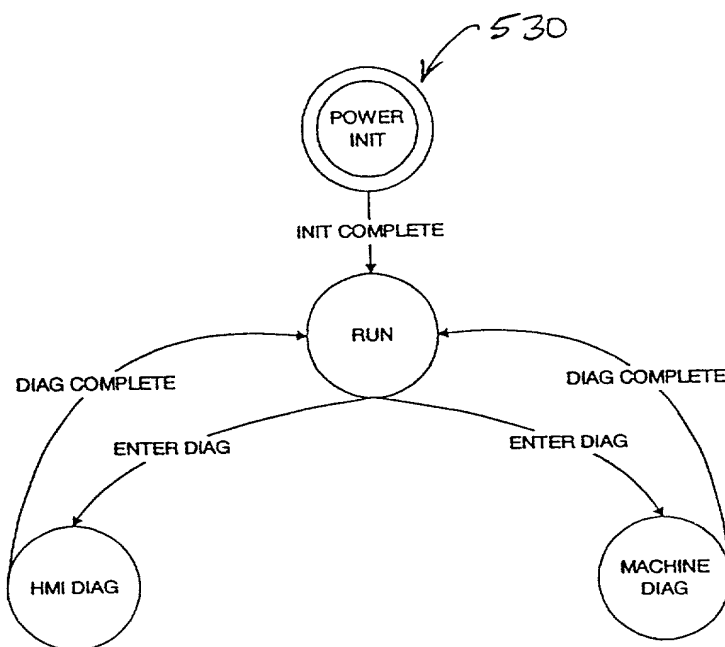


Fig. 43

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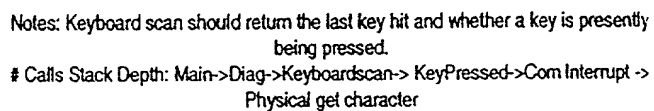


Fig. 44

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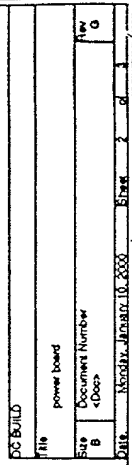


FIGURE 45

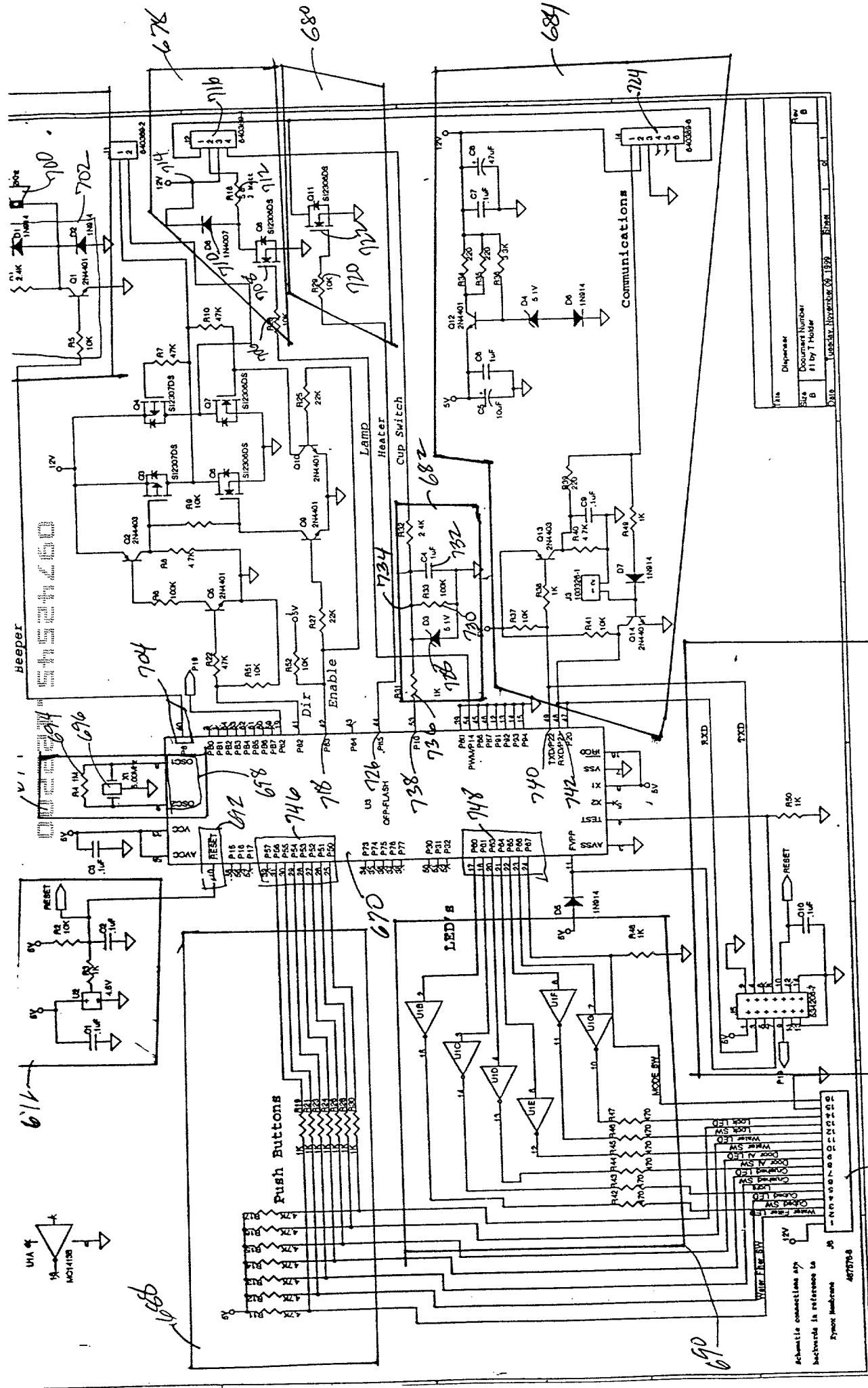


FIGURE 46

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U1A 4
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RESET
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C2 10uF
U2
C1 10uF
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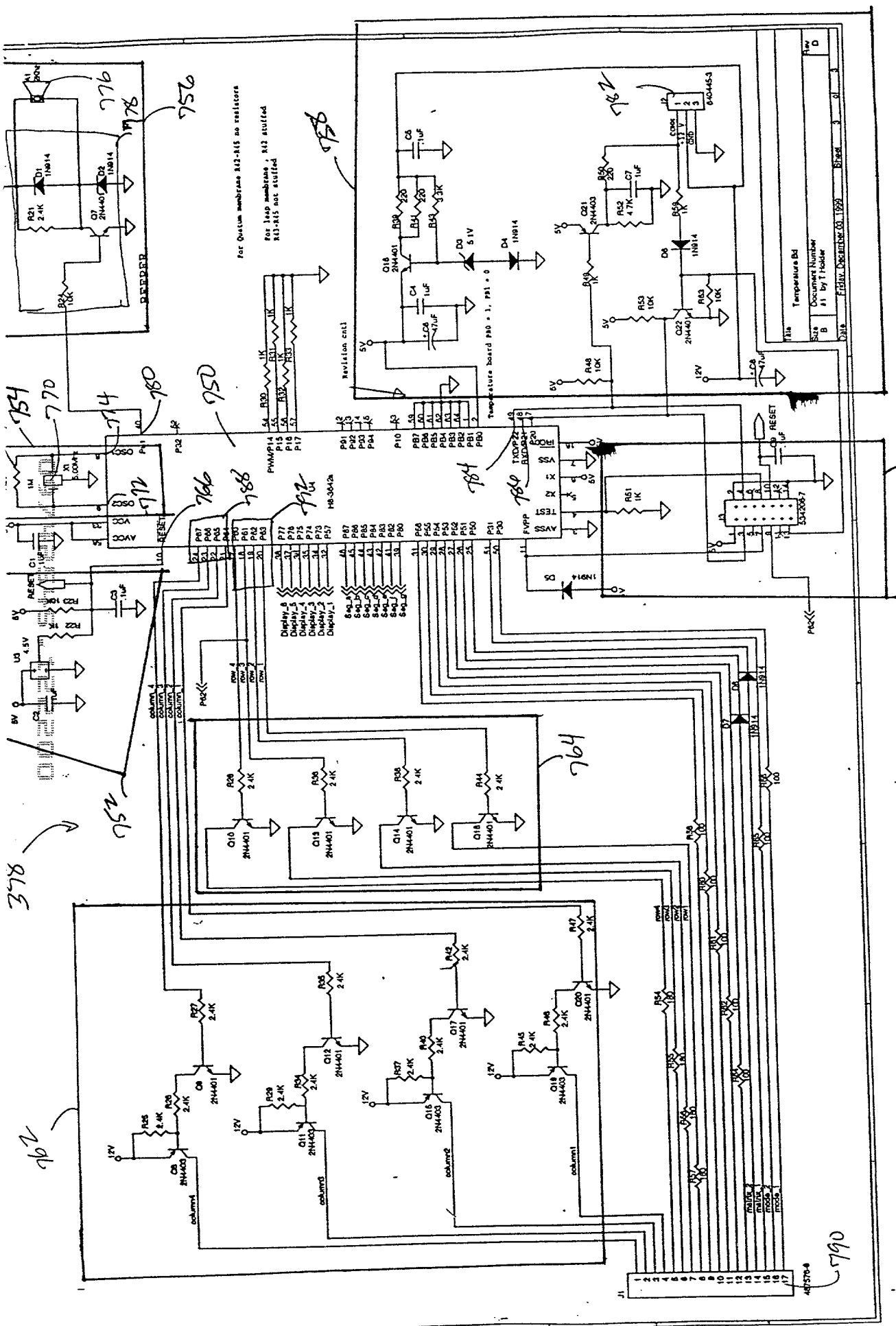


FIGURE 47